

ARCHAEOLOGICAL STUDIES OF THE
SUSQUEHANNOCK INDIANS
OF
PENNSYLVANIA



SAFE HARBOR REPORT No. 2
ARCHAEOLOGICAL SECTION

DONALD A. CADZOW

ARCHAEOLOGIST
PENNSYLVANIA HISTORICAL COMMISSION

Dar.
F146
P41pu
v.3
no.2

UNIVERSITY
OF PITTSBURGH
LIBRARY



THIS BOOK PRESENTED BY

C.V. Starrett



Archaeological Studies of the
SUSQUEHANNOCK INDIANS
OF PENNSYLVANIA



SAFE HARBOR REPORT NO. 2

ARCHAEOLOGICAL SECTION

DONALD A. CADZOW

ARCHAEOLOGIST

PENNSYLVANIA HISTORICAL COMMISSION

PUBLICATIONS OF
PENNSYLVANIA HISTORICAL COMMISSION
VOLUME III
HARRISBURG

1936

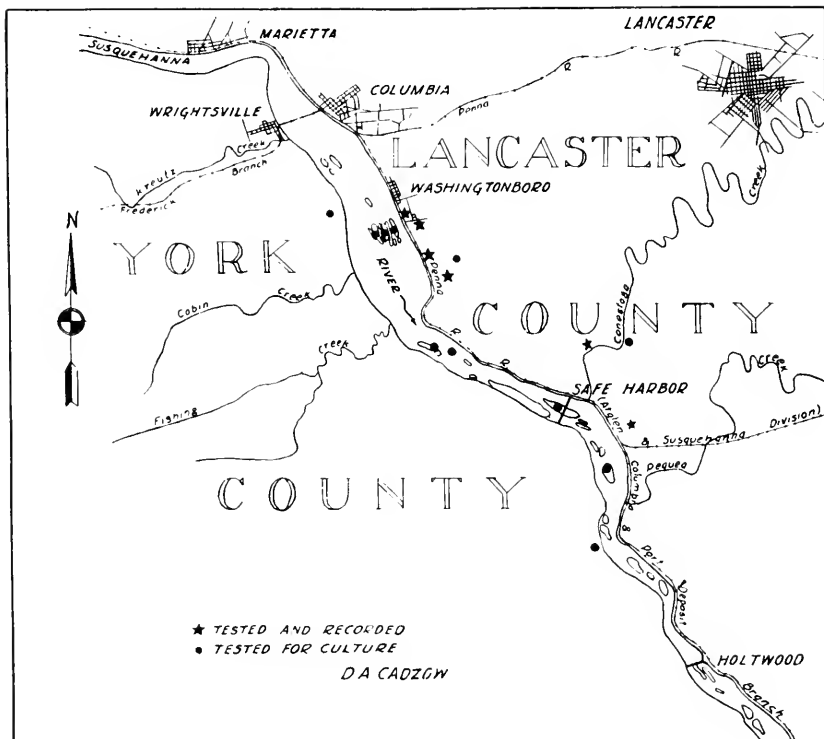
THE PENNSYLVANIA HISTORICAL COMMISSION
LESTER K. ADE, *Chairman*
MRS. FRANK B. BLACK, *First Vice Chairman*
MISS FRANCES DORRANCE, *Second Vice Chairman*
ALBERT COOK MYERS, *Secretary*
ROSS PIER WRIGHT
CHARLES HENRY MOON

TRUSTEES—EX-OFFICIO

GEORGE H. FARLE, *Governor of the Commonwealth*
CHARLES A. WATERS, *State Treasurer*
FRANK E. BALDWIN, *Auditor General*

CONTENTS

	<i>Page</i>
Introduction	5
Foreword	7
Algonkian Indians	9
Iroquoian Indians	11
The Susquehannock Indians	15
Notes on Lancaster County Archaeology	39
Roberts Farm Site	39
Shenk's Ferry Site	43
Strickler Site	62
Washington Borough Burial Site	97
Washington Borough Village Site	135
Frey Farm Burial Site	153
Schultz Farm Site	156
Ceramic Repository Report	188
Summary and Conclusions	201
Notes	205
Index—Petroglyphs, Safe Harbor Report No. 1	208
Index—Safe Harbor Report No. 2	211



ARCHAEOLOGICAL SURVEY, 1930-1932

INTRODUCTION

SPURRED on by the remark that "less is known of the history of the Indians in Pennsylvania than in any other state in the Union," the Wyoming Historical and Geological Society in 1924 undertook a study of the situation. Members started a preliminary survey of the eastern Pennsylvania counties by letter and questionnaire. The purpose was to collect information on existing artifact collections, manuscript and printed accounts, knowledge of sites, trails, and, in fact, anything relating to the life of the Red Man in our Commonwealth where he had played an important role in the pre-history of the country, and over whose mountains and wide valleys he had gradually been forced westward by the advance of the white man's civilization.

The projected work was presented to the American Anthropological Association and approved, then to the Pennsylvania Federation of Historical Societies at their annual meeting in January, 1925. President Colonel Henry W. Shoemaker gave his hearty endorsement and enthusiastic support in an address at the meeting and later as chairman of the Pennsylvania Historical Commission.

Thousands of questionnaires were mailed and thousands of replies were received, bringing in valuable information which was filed by counties. Among the data returned was a book of photographs of the Indian rocks in the Susquehanna River near Safe Harbor, Lancaster County, from David H. Landis, who stated that the drawings on the rocks were threatened by the projected erection of a power dam at that point on the Susquehanna.

The returns from the paper survey were so rich that it was decided to appeal to the State for aid. The General Assembly of 1927 made an appropriation of \$10,000 for the survey, placing distribution of the fund in the hands of the Pennsylvania Historical Commission. This action was ratified by Governor Fisher who appointed to that body the Director of the Wyoming Historical and Geological Society. This made possible the extension of the work into a state-wide project.

The Commission obtained the services of Donald A. Cadzow to superintend its archaeological work. Soon after his appointment came the magnificent opportunity to save these Indian

remains through the cooperation and help of Captain Frederic A. Godcharles, at that time State Librarian, and Mr. John Walls, of the Safe Harbor Water Power Corporation. The outcome of the archæological work is described in the following report.

The Commission takes pride in the important results of its effort to preserve these evidences of our aboriginal predecessors who loved Pennsylvania, the wilderness, as we love Pennsylvania, the Commonwealth, and whose cooperation with William Penn made our early Colonial history the foundation of our later growth.

FRANCES DORRANCE

Vice-Chairman, Pennsylvania Historical Commission
President, Society for Pennsylvania Archaeology
Director, Wyoming Historical and Geological Society

FOREWORD

ARCHAEOLOGICAL research carried on by the Pennsylvania Historical Commission, along the lower Susquehanna river in 1931 and 1932, was primarily for the purpose of establishing an occupation contemporary with the petroglyphs found in the vicinity of Safe Harbor in 1931, and described in Safe Harbor Report No. 1 of this publication series. In this search, evidence of a much later aboriginal tenure of the region was discovered and several archaeological sites were explored and recorded. These sites cover a period of many hundred years and range from early Algonkian Indians to historic and pre-historic Iroquoian Indians.

The expedition was compelled to work against the time when water would be backed against the wall of the new Safe Harbor Dam and flood most of the area under investigation. Men had to be trained in modern scientific methods of archaeological excavation and as a result preliminary field work proceeded slowly. It was only through the full cooperation of the Safe Harbor Water Power Corporation officials and members of the Historical Commission that the tremendous task of saving the archaeological records in the area was finally accomplished.

Every island and the shore line of the river where it is now inundated was explored with test holes and trenches for Indian occupation. This work served as training for the men who later carried on in more prolific and less disturbed areas on the mainland.

Unfortunately most of the previous archaeological work in the region had not been conducted along scientific lines. No attempt had been made to record field data and, as a result, there was no accurate information to make comparisons or form preliminary opinions. Unsustained theories advanced by local enthusiasts had to be discounted and a new approach made to the whole problem.

Many of the Indian sites investigated have been known for years and were partially looted—the objects found either destroyed or scattered. Allowances had to be made for this disturbed condition and at first the riddle of identifying culture seemed impossible to solve. However, after certain previously

unknown mortuary customs had been worked out and a temporary Iroquoian cultural horizon established, the work proceeded rapidly.

The fact that Lancaster County Indian sites were unusually rich in artifacts was indicated after a few days of field work, and before the expedition returned to Harrisburg more than 28,000 objects were excavated, recorded and catalogued.

DONALD A. CADZOW, *Archaeologist*,
Pennsylvania Historical Commission

Archaeological Studies of the SUSQUEHANNOCK INDIANS OF PENNSYLVANIA

WHILE THE principal object of this work is to set before the public a brief account of the archaeological explorations of the Pennsylvania Historical Commission in Lancaster County, it is the writer's aim to present a reasonably complete story of the Indians involved, based on historical records, archaeological collections, and other available sources.

ALGONKIAN* INDIANS

Students have agreed that at one time eastern Pennsylvania was inhabited by Indian tribes of the Algonkian linguistic family, a group which occupied a more extended area than any other in North America. The most important historically known confederacy within this group called themselves Lenapé. They were better known, however, as the Delaware, a name given to them by the early English. Their confederacy consisted of three principal tribes—the Unami or Wonameys, the Minsi or Munsee, and the Unalachtigo. Each of these groups had its own territory and undoubtedly spoke a slightly different dialect.

According to the traditional history of the Lenapé they migrated into eastern Pennsylvania or "Sasafras Land" from the west. The tribal divisions later received their names because of some geographical or other peculiarity that identified the region in which they lived.

The Unami was one of the principal divisions and occupied the Delaware valley from the junction of the Lehigh River southward to about Newcastle, Delaware. According to Brinton their name means "people down the river." (1). Their totem was the turtle and they have been called the Turtle Tribe by some authorities who also claim they held precedence over the other groups in council.

The Minsi or Munsee originally occupied the headwaters of the Delaware River in New York, New Jersey, and Pennsyl-

* Algonquian.

vania, as far south as the Lehigh. Their totem was the wolf (1). They felt the pressure of Iroquois invasion in Pennsylvania from the north very early and according to tradition were among the first to start the final westward migration. Heckwelder claims their territory extended "far beyond the Susquehannah." (2). This may have been true previous to the arrival of the Iroquois and after they were subjected but assuredly not while the Five Nations and the Carantouan were at war with them.

The Unala'tka or Unalachtigo were the southernmost group of the three main divisions. Their name means "people who live near the ocean," and within the known historical era they occupied the west bank of the Delaware River in Delaware and the east bank which is now in New Jersey. Their totem was the turkey and they felt the pressure of southern Iroquois invasion along the Susquehanna very early and were forced farther eastward into New Jersey and north along the coast.

The Lenāpé were recognized by cognate tribes as being superior in political rank and were always addressed by the title of "grandfather." Contemporary Algonkian groups living both to the north and to the south of them claimed a common origin, and according to tradition the central home territory from which all these tribes diverged is now occupied by the Commonwealth of Pennsylvania.

The Lenāpé migrated into eastern Pennsylvania from the west. How long they were here before the advent of white men is one of the problems to be solved by archaeological research. The fact that other Indian groups preceded the Lenāpé as occupants of the territory is conceded and here the question arises as to who these other groups were and where they went. Only by closely authenticated archaeological records will we be able to separate this occupation and record criteria with which basic cultural periods can be established.

In New York State Algonkian criteria have already been divided into various periods of development. An attempt has also been made to establish a chronology, but so far this has not been scientifically successful because of the lack of accurate archaeological evidence from the area covered by Pennsylvania.

It is evident that scientifically gathered data upon archaeological sites in the eastern part of the State is needed. Most

of the large collections of Indian artifacts in this region have been gathered without any attempt to gain real archaeological information. With the exception of the brief summary of Warren K. Moorehead and the report of the late Dr. George P. Donehoo, published by the Pennsylvania Historical Commission in 1918, practically no source material is available on the archaeology of this vast section. Mr. Max Schrabisch's excellent report, published by the Commission in 1930, describes some of the problems to be encountered on the upper Delaware.

Historical records show that the Lenāpé and other eastern Algonkian groups had loose confederacies. A lack of constancy, however, seemed to prevent them from organizing with any degree of permanence. This trait persisted well into colonial times and when they met with superior races it caused their final downfall.

IROQUOIAN INDIANS

It was not the white race that started the decline of the eastern Algonkian ascendancy. It was the invasion of their territory by peoples of Iroquonian stock, so named from its best known representatives, the Five Nations. The name this group had for themselves as a political body was Ongwanoⁿsionni, "we are of the extended lodge." The name Iroquois was given to them by the Algonkians and was originally Iriⁿakhoiw, "real adders" or "snakes." Later, the name was used by the French, the suffix "ois" added and the name finally corrupted to its modern form Iroquois.

It is now known that successive waves of Iroquoian migrations moved northeast into Pennsylvania and New York from the Middle Mississippi Valley some time before the tenth century (28) (see also page 134). They were firmly established in the north before the first white contact and the divisions of the stock were found in three separate regions of North America.

In the mountain district, now included in east Tennessee, northern Georgia, and western North Carolina were the Cherokees; near the coasts of southern Virginia and northern North Carolina, the Tuscaroras and the Nottoways. All the other Iroquoian peoples were found entirely surrounded by Algonkians. Near Niagara were the Neutrals, who extended from

western New York along the north shore of Lake Erie. North of the Neutrals the Tionontati (Tobacco Nation) and the Hurons occupied the country between Lakes Ontario and Huron. To the southeast along the Susquehanna Valley were the Andastes on the upper river, and the Susquehannocks along the lower river and Chesapeake Bay. The Eries held the south shore of the lake now called by their name. Finally, through New York, bounded on the west by the Eries and Neutrals, on the south by the Andastes, and southeast, east and north by Algonkian tribes, stretched the territory of the Five Nations, comprising the Cayuga, Mohawk, Oneida, Onondaga, and Seneca.

The Five Nations, as an organized group, was second to no other Indian people in North America. The power of their confederacy on the eastern part of the continent was felt from the sub-arctic almost to the Gulf of Mexico. Their motive for organizing was peace and welfare among men by the recognition and enforcement of their civil government. They were imbued with a sincere respect for their own laws, and wars with other groups were primarily for the purpose of perpetuating their political life and independence. The Five Nations intended to have peace regardless of the fact that they often had to annihilate entire tribes in order to obtain it. It is interesting to speculate how far this clever warlike group would have gone if it had not been for the ascendancy of the white man with his complex culture in eastern North America.

The social organization and material culture of the Iroquois of New York state and Canada is fairly well known. The excellent publications of William M. Beauchamp, Alanson B. Skinner, Arthur C. Parker, Mark R. Harrington, and other recorders in this field have established criteria with which students can work to great advantage.

It is generally believed that at one time the Cherokee lived in Ohio and in western Pennsylvania and that they migrated south during the latter part of the fifteenth century. Lenapé tradition places them on the Ohio and recounts long wars with them. These were supposed to have been carried on well within historic times or until 1768 when peaceful relations were finally established.

Loskiel writing in 1778 says that about 1698, when the whites were settling along the Atlantic Coast, the Delawares

came to the Ohio, drove the Cherokee away and settled about Beaver Creek. He adds, "at the present time, the Delawares call this whole country of the Ohio as far down as the river Wabash 'Alligewineugk' meaning 'a land into which they come from distant parts.'" (3).

There always has been some doubt as to the exact definition of the name Alligewi (Talligewi) and the group of Indians to which it referred. According to tradition they were the Cherokee. It may be possible, however, that they were northern Iroquoian people instead of southern. General John S. Clark in his personal notes says:

"In regard to the Alligewi tradition of Heckwelder in which the Delawares united to make war against the tribes on the Ohio, Baldwin believes these were the Cherokees, but in this I think he was mistaken as certainly the Massomacks intervened between the Susquehanna tribes and Cherokee and first had to be driven out. The Massomacks were deadly enemies of all the Delaware people and probably the latter were aided by the Susquehannocks and Andastes in making war against them just as described by Heckwelder. Later the Delawares became subject to the Five Nations." (4).

The Five Nations were called Massomacks or Massawomeckes, and Captain John Smith, in 1608, reported them at war with the Susquehanna tribes. If it was a group of northern Iroquois between the Susquehanna tribes and the Ohio, certain historical conclusions based on late Cherokee occupation and eventual southern migration will have to be changed.

After the final defeat of the Eries in 1654, the Five Nations claimed the Upper Ohio watershed and occasionally used it as a hunting territory. If the Cherokee had been in the area at this time they would have been driven southward. Skinner believed the Cherokee were forced out of the region originally by successive waves of prehistoric Iroquoian people who followed them northward along the Ohio.

The Cherokee had a typical Iroquoian culture similar in many ways to that of the Susquehannock and other northern tribes. One of the problems still to be solved by archaeological research is whether the so-called Allegewi were culturally northern Iroquois or southern.*

* Recent archaeological explorations of the Pennsylvania Historical Commission in southwestern Pennsylvania on the Youghiogheny River indicate that the Upper Ohio prehistoric Iroquois culture was northern rather than southern.

Another important Iroquois nation residing in part of what is now Pennsylvania was the Erie. They were a populous, more or less sedentary people, who were often called in very early historical records the Cat Nation (*La Nation du Chat*), or Raccoons, etc. They held the territory to the west of the Andastes bordering the southern shore of Lake Erie and north-west of the Susquehannock, the group with which this paper is primarily interested. Historically, very little is known about the Eries outside of contemporary records in the *Jesuit Relations*. Their affiliations were with the Hurons and their material culture was similar. Their power was broken about 1654 by the Five Nations and they were either assimilated or destroyed.

As will be seen later in this paper the Hurons* indirectly played their part on the historical and pre-historical stage of Pennsylvania. They had a confederation of loosely organized tribes, and the name Huron was given to them by the early French. Their name for themselves was *Ouendat*, or *Wandat*, possibly meaning "the islanders." Later it was corrupted to *Wyandot*, and the few survivors of this group are still known by this name. They were dispersed and practically exterminated in 1648 by the Five Nations. Some of the survivors moved westward and others were absorbed by the Neuter Nation. It is claimed that 10,000 Hurons were destroyed in one attack in 1648.

We will mention the Neuter nation but briefly here, for to the best of our knowledge, they did not enter the Pennsylvania picture. Their territory was far to the north in what is now Canada. Champlain reported that they could muster 4,000 warriors in 1616. Before 1653 the Five Nations had attacked them so consistently that they had lost their identity as an independent body and were practically destroyed.

* From the French "hure" meaning "bristly." The name Huron frequently with an added epithet like "vilan," "base," was used in France as early as 1358 as a name expressive of contempt.

THE SUSQUEHANNOCK INDIANS

1606—1695

Of all the native inhabitants of Pennsylvania the least known to the ethnographers is the southern division of the northern Iroquois. They were called Susquehannock by the Powhatan* Indian tribes, later the English adopted the name and it was applied to them by the first known white man to meet them, Captain John Smith.

The story of the Susquehannocks is a tragic one. They appeared early on the historic stage along the Susquehanna watershed, played a leading role and declined into obscurity. Through the pages of history they are called a variety of names out of which the one applied by Powhatan and Captain John Smith seems to be the most appropriate. This name has been explained by various authorities as Algonkian and not Iroquoian as we might expect it to be. According to Brinton, "the terminal 'K' is the place sign, 'hanna' denotes a flowing stream, while the adjectival prefix has been identified by Heckwelder with 'schachage,' straight, from the direct course of the river near its mouth, and by Mr. Guss with 'woski,' new, which he thinks referred to fresh or spring water." (5).

In the writings of McSherry we find the following Algonkian interpretation—"Săskwē-ăn-og-Sask means rubbing, sweeping, grating. 'K' is the sign of prolongation. 'We' in composition means the effect produced by waves. 'Og' is plural animate termination. Hence Săs-k-wē-ăn-og means 'those who live in a place where water is heard grating (beating) on the shore!'" (6).

Miss Gladys Tantaquidgeon interprets the name in Delaware as "sak a'n' hanek, river full of islands or projections above the water," from sak .i.x^an, "something in plain sight projecting up," and a'n'h a n.e k "running water or streams." The people inhabiting the territory along the banks of the river would be called Sak.an han.eyok." (7).

According to Dr. Frank G. Speck, the term sask^{ew}han'ne "muddy river" appears in a study of the Nanticoke and Conoy

* POWHATAN—The ruling chief and the founder of the Powhatan confederacy in Virginia at the period of the first English settlements. About thirty cognate Algonkian tribes were subject to his rule. He was the father of Pocahontas and his proper name was Wahunsonacock.

Indians. (8) This may also account for Hewetts' interpretation of the name—"signify roiley river," in his story of the Conestoga (9).

The Cree Indians of northwest Canada interpret the name as meaning "water rubbing hard upon something." This interpretation agrees with McSherry's and we are inclined to accept his translation and believe the name is of Algonkian origin as the Crees are among the few tribes left where the tongue still remains almost pure, and their translation of Susquehannock as meaning "people living where water rubs on the shore" would be appropriate for a group living along the rapids of what is now the Lower Susquehanna River.*

The early Swedes and Dutch called the Susquehanna Iroquois "Minquas" from the Delaware name applied to all tribes of this group. These names are corruptions of the Algonquian *mingwe* meaning "stealthy, treacherous." Minquas was also used extensively during the late colonial period to designate any detached body of Iroquois regardless of where they were from.

To the French and the Five Nations the Susquehanna Iroquoian groups were known as Andastes, Andastoghernons, Gandastogues, Conestogas, etc., etc. The Indians undoubtedly separated the upper and lower river tribes but the white man did not do so conclusively in his records of the period.

In our histories the Iroquois of eastern Pennsylvania have been given a variety of misspelled and misinterpreted proper names. This jumble is very confusing to a student, and in this paper we will call the Susquehanna Iroquoian groups Carantouans to distinguish them from the Five Nations. We will also divide them into two main groups, the Andaste on the upper rivers, and the Susquehannock on the lower river. For the lack of a better informed authority we will accept the interpretation of General John Clark, in his unpublished notes, for the meaning of Carantouan. He believed the term was derived from the Iroquois *garonta* and *touan* meaning "great tree." In this translation he agrees with J. G. Shea of Elizabeth, N. J., a contemporary student of the Iroquois, especially through the Jesuit Relations.

In his early detached notes Clark was inclined to believe

* Truman Michelson in a recent article discussed certain phases of Algonkian languages and in closing wrote: "Summing up, we may say that Powhatan clearly belongs with the Cree group of Central Algonquian languages." (29).

the term might indicate "big horn eminent at the head." In this belief he was first influenced by the "Capitanessis" shown on the Susquehanna in some of Champlain's early maps. In his final analysis, however, he agrees with Shea.

The Susquehannocks apparently had indirect contact with white men before they met Captain Smith. While he was visiting the Tockwoghes, a group of Indians on the Chesapeake Bay, he recorded the fact that—"Many hatchets, knives, peeces of iron, and brasse, we saw amongst them, which they reported to have from the Sasquesahanocks, a mightie people and mortall enemies of the Massawomeks."* Smith thought this contact was with the French who were in touch with the northern Iroquois at that time and said, "Many descriptions and discourses they made us, of Alquanachuck, Massawomek, and other people, signifying they inhabit upon a great water beyond the mountains which we understood to be some great lake or river of Canada, and from the French to have their hatchets and commodies by trade." 1606

Indians were no novelty to Captain Smith, and when he finally saw the Susquehannocks in 1608 he was impressed by these people more than by any other Indians he had met. After his contact with the Tockwoghes, a name that has survived to this day in parts of the south meaning "poor land" or "poor people," the Captain could not help being surprised and pleased with the clean, independent warlike Iroquois. His record of them is undoubtedly exaggerated but is valuable because it is one of the few contact descriptions of these people. He said, "Sixty of those Sasquesahanocks came to us with Skins, Bowes, Arrows, Targets, Beads, Swords and Tobacco-pipes for presents. Such great and well proportioned men are seldome seene, for they seemed like Giants to the English yea and to the neighbours, yet seemed of an honest and simple disposition, with much adoe restrained from adoring us as Gods. Those are the strangest people of all those Countries, both in language and attire; for their language it may well besee me their proportions, sounding from them as a voyce in a vault. Their attire is the skinnes of Beares, and Woolves, some have Cassacks made of Beares heads and skinnes, that a mans head goes through the skinnes neck, and the eares of the Beare fastened to his shoulders, the nose and teeth hanging downe 1608

* Massawomeks—Five Nations.

his breast, another Beares face split behind him, and at the end of the Nose hung a Pawe, the halfe sleeves comming to the elbows were the neckes of Beares and the armes through the mouth with the pawes hanging at their noses. One had the head of a Wolfe hanging in a chaine for a Jewell, his tobacco pipe three-quarters of a yard long, prettily carved with a Bird, a Deere or some such devise at the great end, sufficient to beat out ones braines; with Bowes, Arrows and Clubs, suitable to their greatnesse. They are scarce known to Powhatan. They can make near 600 able men, and are palisaded in their Townes to defend them from the Massawomenkes, their mortal enemies. Five of their chief Werowances came aboard us and crossed the Bay in our Barge. The picture of the greatest of them is signified in the Mappe. The calfe of whose leg was three-quarters of a yard about, and all the rest of his limbes so answerable to that proportion, that he seemed the goddliest man we ever beheld. His hayre, the one side was long, the other close with a ridge over his crowne like a cocks combe. His arrowes were five-quarters long, headed with the splinters of a white chirstall-like stone, in form of a heart, an inch broad, and an inch and a half or more long. These he wore in a Woolves skinne at his backe for his quiver, his bow in one hand and his club in the other." (10).

Although Smith did not visit the villages of the Susquehannock he named them and located them upon his map as follows: "Sasquesahanough, Quadroque, Attaock, Tesinigh, Utchowig and Cepowig." The accuracy of his map is questionable but, later writers have agreed with Smith as to the locations of some of these villages and archaeological evidence checks with at least one. The town of "Sasquesahanough" measures about 22 miles from the mouth of the river on Smith's map. This would bring it to a few miles below Conowingo near the mouth of the Octararo, in Maryland. The distance of 32 miles upriver to "Quadroque" on the Smith map would locate this town near the present village of Washington Borough on a modern map. This would place "Tessinigh" at Conewago Falls near Falmouth.

Apparently in Smith's time, the Susquehannock controlled all the upper tributaries of the Chesapeake and to the north of South Mountain along the river. The fact that their power was felt far to the east will be shown later.

The second white man to meet Carantouan people and record the fact, according to present available records, was Etienne Brule, Samuel de Champlain's interpreter. He had been sent to the tribes of the Susquehanna because they were allies of the Hurons with whom Champlain was closely associated. Brule visited the Andaste in 1616 near where Athens, Pennsylvania, now stands. The object of his visit was to ask for reinforcements to assist in a proposed attack on Onondaga Fort, one of the strongholds of the Five Nations in what is now New York State. He had to wait for the Andastes to prepare themselves and "busied himself in exploring the country, visiting nearby lands and nations, and in following the course of the river (Susquehanna) which flows in the direction of Florida." He explored the river to the sea and reported in 1618 a large number of people who are of good natural disposition, esteeming the French Nation above all others." (11). 1618

Brule was the first white man definitely to record the fact that he had set foot upon what is now the soil of the Commonwealth of Pennsylvania. He brought to the Carantouan Indians a renewed alliance with the Huron Tribe that later caused their complete downfall.

In 1616 Captain Hendrickson of New Netherland reported meeting "Minquas" at latitude 38° to 40° north, probably some place in Delaware Bay. He traded with them and used the name Minquas on the map accompanying his report. (12). 1616

This map is the famous "Carte Figurative," and is the first known geographic record of the territory now within New York and Pennsylvania, showing the Susquehanna as the outlet of Lake Ontario and causing it to flow into Delaware Bay.

The region explored by Hendrickson was undoubtedly under the domination of the Susquehannock at the time. It is doubtful, however, if the people he met were Susquehannocks. If they had been, they would not call themselves "Minquas."* He may have met some Lenāpē who tried to explain to the inquisitive Dutchman that the country to the west was occupied by people with this name.

Apparently between 1620 and 1640 the Carantouans waged a relentless war against surrounding Algonkian tribes, especially those on the lower Potomac and Delaware River and Bay. De-

* See page 16.

1633 Vries met a party of fifty Susquehannocks in the Delaware River in 1633. He said they were part of a large party numbering more than six hundred that was in the region to make war. A few days later he met Algonkians who reported to him that the war party had killed some of their people, burned their houses and returned to their own country.

That the region was eventually conquered and that the Susquehannocks penetrated well into what is now New Jersey is shown by the writings of Cornelius Van Trehoven who says: "The district inhabited by a nation called Raritangs is situated on a fresh water river (Raritan)* which flows through the lowland which the Indians cultivated. This district was abandoned because they were unable to resist the Susquehannas so they migrated further inland." (13).

1634 When Lord Calvert founded his colony at St. Marys, on the Chesapeake in 1634, the Piscataway Indians (Piscataway)** were deserting their villages and fleeing before the Susquehannocks, who at that time claimed as far south as the Choptank on the eastern shore and the Patuxent on the western shore.

1637 In the *Jesuit Relations* for 1637 we find a reference to the Susquehannock. Apparently during that year, according to Le Mercier, disease was rampant along the river. He says, "On the 20th we heard from the Anons a new opinion touching the disease, that a rumor ran that it had come from the Agniehenon (Mohawks) who brought it from the Andastoerhonon (Susquehannocks), which is a nation near Virginia." (14).

In the early Swedish records we find the Susquehannocks called by a great variety of names, of which Black Minqua seemed to be the favorite.

1639 The story of New Sweden has been told by many able writers and it is sufficient to say here that it was supposed to lie 39° 40" on both sides of the Delaware River. It extended in length from Cape Henlopen at the entrance of the bay, about thirty miles (Swedish)***to the great falls of the river on the northeast (Trenton).

* RARITAN (raruwitank), "the stream that overflows." A former small division of the Lenape occupying the valley of Raritan River and the left bank of the Delaware as far down as the falls at Trenton.

** PISCATAWAY. A former Conoy village in Prince George County, Maryland. It was the seat of a Jesuit mission in 1640, but was abandoned in 1642 through fear of the Susquehannocks.

*** 6½ English miles—1 Swedish mile.

Thomas Holn has left an excellent account of the Susquehannock. He says: "Besides the Americans there were found when the Swedes first came to this country within eighteen miles (Swedish) circumference, ten or eleven other Indian nations who spoke different languages and had their own sachems or chiefs over them. Among these, the Minquas or Minckus were the principal and were renowned for their warlike character. These Indians lived at the distance of twelve miles from New Sweden, where they daily came to trade with us. The way to their land was very bad, being stony, full of sharp gray stones, with hills and morasses, so that the Swedes, when they went to them, which happened, generally, once or twice a year, had to walk in the water up to their armpits. They went thither with cloth, kettles, axes, hatchets, knives, mirrors and coral beads, which they sold to them for beaver and other valuable skins, also for black foxes and fisher's skins, which is a kind of skin that looks like sable, but with longer hair, and silvery hair mixed like some of the best sables, with beaver, velvet, black squirrel skins, etc. These precious furs are the principal articles which the Minquas have for sale.

"They live on a high mountain, very steep and difficult to climb; there they have a fort or square building surrounded with palisades in which they reside. There they have guns, and small iron cannon with which they shoot and defend themselves and take with them when they go to war.

"They are strong and vigorous, both young and old; they are a tall people, and not frightful in appearance. When they are fighting they do not attempt to fly, but all stand like a wall, as long as there is one remaining. They forced the other Indians, whom we have before mentioned (Delaware), and who are not so warlike as the Minques, to be afraid of them, and made them subject and tributary to them; so they dare not stir much less go to war against them but their numbers are at present greatly diminished by wars and sickness." (15).

Vimont mentions them again in 1640 as being numerous and more or less sedentary. (Rel. 1640 p. 35).

Apparently the years between 1640 and 1652 were critical ones for the Carantouans, as they were pressed by enemies both north and south. In 1643 Lord Calvert left his colony in Maryland and sailed for England. A Giles Brent became acting Governor and he commissioned Cornwallis to lead an

1640

1643

expedition against the Susquehannock. The author of *Nova Albion* writes that with fifty-three "raw and tired Marylanders" he met two hundred and fifty Indians and killed twenty-nine. (16).

1647 On the north the Five Nations had secured fire arms from the French and were a decided menace. They were threatening the Hurons, and the Jesuits with this tribe were worried. In the *Relations* for 1647 we find the following: "Our father with the Hurons informs us that the Indians of Andastone whom we believe to be neighbors of Virginia, and who formerly had great alliance with the Hurons, to the extent that people of their (respective) countries are still found in their territory, these Indians, I say have given the Huron these few words to understand: We hear that you have enemies: you have but to say to us raise the tomahawk, and we assure you, that they will either make peace or we will make war on them. The Hurons greatly rejoiced at these fine offers and have sent an embassy to these nations. The chief of this embassy is a worthy Christian, accompanied by eight persons, four of whom have embraced the faith of Jesus Christ."

1648 Reagueneau writing from the Huron country in 1648 says: "Moreover our Hurons have sent an embassy to the Andastaronons, nations of New Sweden, their old Allies, to solicit them to meditate a complete peace or resume war, which they had only a few years ago with the Iroquois Annieronons. A great relief for this country is expected from them."

Reagueneau also describes the region in which the Andastaronons live, and they are undoubtedly the Susquehannock. He says: "Andastoe is a country beyond the Neuter Nation distant from the Huron 150 leagues S. E. $\frac{1}{4}$ from the Hurons, that is to say S. inclining a little E. but the road that is necessary to take to go there is nearly 200 leagues (600 Miles) on account of the detours."

1652 In 1652 six chiefs of the Susquehannock, Sawahegeh, Auroghtergh, Scarhuhadgh, Rutchogah and Nathheldaneh, in the presence of a Swedish Commission ceded to Maryland all their territory from the Pauxtent River to Palmers Island and from the Choptank River to the northeast branch, north of the Elk River. This gained the Susquehannocks an important white alliance that lasted until 1667. Maryland gave them men, ammunition and cannon to prosecute the war against

their enemies to the north. That this war was carried on to the extent of their ability is shown by contemporary records. The front changed from the lower Susquehanna River and moved northward toward the homeland of the Five Nations. It caused unrest in all the seaboard colonies of the period.

The Jesuits, who were working among the defeated Huron, were worried over the war situation for several years. Their sympathy was naturally with the Susquehannocks, as the successful warriors of the Five Nations apparently made life miserable for the Black Fathers. In their *Relations* for 1657 we find the following notation: "We blamed their youth, we told them that these disorders had involved them in war with the nations called Mahinganak (Mahican) and with the Andastahoneronnons (Susquehannock)." 1657

In 1660 the Fathers were still concerned about the troublesome times and were beginning to take an interest in the histories of the groups involved, and recorded the following in their *Relations*: "Of the five people who compose the whole Iroquois nation those whom we call the Agnieronnon, have been so many times at the top and bottom of the wheel in less than sixty years that we find in history few examples of similar revelations. As they are naturally insolent and really warlike, they have trouble with all their neighbors; with the Abnaquoriois who are on the east; with the Andastogehronons, toward the south, a people who inhabit the coast of Virginia. We cannot go very far back in research of what has occurred among them since they have no other libraries than the memory of the old men. What we learn from these living books is that toward the end of the last century, the Agneronnons were reduced so low by the Algonkians, that there appeared scarcely any of them on the earth; that nevertheless what few remained, like a generous germ had so grown in a few years that they in turn brought the Algonkians down to the same straits they had been in. But this state did not last long for the Andastogehronons made so fierce a war for ten years, that the nation was almost extinct." 1660

That the power of the Five Nations was on the wane in 1663, and that they were being humiliated, is shown by the rout of 800 Seneca and Cayuga warriors sent against the Susquehannocks by the Confederation. Assisted by their allies, the Marylanders, the Susquehannock had prepared themselves

for defense in one of their forts, supposed to be near where the town of Washington Borough now stands in Lancaster County.

1663

Jerome Lalemont in the *Relations* for 1663 (ch. IV, 10) says: "The three other Iroquois nations had no better success in an expedition which they undertook against the Andastogueronons, Indians of New Sweden, with whom war has been acknowledged for some years back. They make up accordingly an army of 800 men: they embark on Lake Ontario about the beginning of the month of April last, they go to the extremity of this fine lake to reach a great river, almost like that of our St. Lawrence, which bears them without rapids and without falls to the very doors of the town of Andastogue. Our warriors arrived there after having sailed more than a hundred leagues on this beautiful river.* They encamp in most advantageous posts, and prepare for a general assault, thinking to carry off the whole town in their usual way and return at once loaded with glory and captives. But they saw that this town was defended on one side by the river, on whose banks it was situated, on the other by a double line of large trees, flanked by two bastions in European style and even equipped with some pieces of artillery. The Iroquois surprised at these well planned defenses abandoned the idea of an assault and after some light skirmishes had recourse to their ordinary suppleness, to obtain by trick what they could not take by force. They accordingly make an overture of some parleying, they offer to go into the besieged place to the number of twenty five men, some to treat of peace, they said, some to buy provisions for their return. The gates are opened to them: they enter: but at the same time they are siezed and without more delay, they are forced to ascend a scaffold, and in sight of their own army they are all burnt alive. The Andastogueronons thus declaring the war more furiously than ever, give the Iroquois assurance, that this was only the prelude of what they were going to do in their country, and that they had only to return as soon as possible to prepare for a siege or at least to see their fields laid waste. The Iroquois humbled by this affront, more than can be imagined, disbanded,

* From Lake Ontario via Cohecton, Chemung and Susquehanna to Shamokin. (223 miles) Harrisburg (274 miles) Conewago Falls (288 miles) Columbia (303 miles).

and come to put themselves on the defensive, they who till now had borne their victorious arms through all the countries."

Between 1660 and 1667 the Susquehannock reached the height of their power. Had they taken full advantage of their strength they might have changed our early history considerably. As a result of their rise the warlike activities of the Five Nations were curtailed.

1660
1667

That the Black Fathers in the north were pleased with the situation and wished that the haughty Five Nations would be humbled is shown by the tone of their Relations during this period. Rafeix in 1672 tells how sixty Susquehannock boys between fifteen and sixteen years of age surprised and killed two northern warriors, and following up their advantage pursued the rest of the war party in canoes and killed fourteen more and wounded many others. The priest ends his note with: "God preserves the Andastoguen who have only three hundred warriors and favors their army to humble the Iroquois and preserve us peace and our Missions."

During the year of 1670 the Susquehannock sent an ambassador to the Five Nations with three wampum belts to treat for peace. They kept him until the spring of 1671. Then, after a successful raid to the south, where they captured some prisoners, they proceeded to tomahawk him and burn his body together with that of his nephew who accompanied him.

1670

1671

In 1672 what was left of the ambassador's body was disinterred and buried on the war trail to the south. This was done by the sachems at the request of a medicine man. A few days later two women were killed within fifty paces of the Cayuga palisades by Susquehannocks.

1672

The Susquehannocks, weakened by the loss of their white Maryland allies, were now on the decline. They raided into the north, but became weaker as the Five Nations grew stronger.

A brief description of how some of the Susquehannock prisoners taken by the Five Nations were treated is given by John de Lamberville who was stationed at Onondaga in 1672. He says:

"Two Andastoguez taken by the Iroquois have been happier: they received baptism immediately before the hot irons were applied. One of whom having been burnt during the night from his feet to his knees in a cabin, still prayed to God with

me the next day, being fastened to a stake in the square of the town. I do not repeat here what is already known that the torments they compel prisoners of war to endure are horrible. The patience of their poor victims is admirable, but it is impossible to behold without horror their flesh roasting and men who make a vile meal of them like hungry dogs.

"Passing one day near the spot where they were cutting to pieces the body of an Andastoguez, I could not refrain from approaching and declaiming against this brutality. I saw one of these man eaters who was asking for a knife to cut off an arm. I opposed it and threatened him, that if he did not desist, God would know how to punish him sooner or later. He told me as a reason that he had been invited to a dream feast where nothing was to be eaten but human flesh brought by the very persons who were invited to the banquet. Two days later God permitted that his wife fell into the hands of the Andastoguez who avenged on her person the cruelty of her husband." (*Relations* 1672-73, p. 96).

The Susquehannock undoubtedly treated their captives in a similar manner for stories of their cruel practices are found in the pages of history.

1674 The decline of the Susquehannock power was well underway by 1674. This was not from the arms of their enemies, but primarily from disease, probably brought to them by white men. This, together with famine and the lack of numbers to watch their diminishing frontiers, so reduced their strength that they were finally subdued by the Five Nations.

Unfortunately we have no details as to the conquering forces or to the time or manner of their defeat. They were apparently too proud to yield to those with whom they had fought as equals and refused to submit to holding their land by sufferance, yet they were too weak to withstand their enemies. Those who were not captured left the river bearing their name, and took up a position in western Maryland near Piscataway below present Washington, supposed to be their ancient home.

1675 The date of the final submission of the Susquehannock is verified by the following entry in the *Relations* for the year 1675: "In fact since they (Five Nations) have entirely defeated the Andastogues who were their most redoubtable enemies, their insolence knows no bounds."

Nichols Perrot, *Moeurs et Coutumes*, explains how the cap-

tives of this final campaign were disposed of in a *Relation* for the same year: "The Iroquois being unable to longer make war on his neighbors, the force of arms having compelled him to put an end to all his cruelties; he went to seek to do so among the Andastes whom he defeated in several engagements and by whom he increased his strength considerably, by the great number of children and other prisoners to whom he granted life. The Andastes were entirely defeated and those that remained surrendered with a mutual consent, they were received, and are at present among the Tsonontonans." (Probably the Seneca).

With this final paragraph the Susquehannock disappear from the *Relations*, the most authentic contemporary records of those troublesome times from 1650 to 1675.

For a few years they appear again in Maryland and the best account of their stand against overwhelming odds and misunderstanding is given by S. F. Streeter in the *Historical Magazine* for March 1857 (17).

It is believed that war parties from the Five Nations, with the trail into Maryland and Virginia unprotected by their ancient enemies, took advantage of the opportunity and raided far to the south of their usual territory. Their atrocities were blamed on the Susquehannocks and we cannot improve upon Mr. Streeter's description of the latter's final end:

The presence of the Susquehannock tribe on their western borders had already excited dissatisfaction among the people of Maryland, especially those whose plantations were situated near the Piscataway: and efforts had been made, but in vain, to induce them to leave the position they had taken. This was on the north side of the Piscataway, in a strong fort, which had either originally belonged to the Piscataway tribe, or was one built by the province a year previous*, for the protection of the frontier settlements, and perhaps left unoccupied during the time of peace which had preceded these occurrences. From its strength and construction the latter supposition seems the more probable.

The walls of the fort were high banks of earth, having flankers well provided with loop-holes, and encompassed

* In 1644 an Act was passed "to enable the governor to establish and support a garrison at Piscataway."—Bacon's Laws.

by a ditch. Without this, was a row of tall trees, from five to eight inches in diameter, set three feet in the earth and six inches apart, and wattled in such a manner as at the same time to protect those within and afford holes for shooting through.* These defenses were ingenious and strong, and enabled the occupants to set at defiance any ordinary besieging force, unless provided with cannon, or prepared to starve its defenders into a surrender. Here the Susquehannocks, to the number of nearly one hundred, with their old men, women, and children, established themselves, and here they were determined to remain.

Remembering only the deeds of violence that had been done, and taking counsel of their apprehensions, forgetful, as it would seem, of the outrage which had stung the savages into a revengeful mood, the Marylanders determined to organize an expedition against them, in order to punish their presumed misdeeds, and drive them from the province.

Doubting, however, their ability to carry out promptly and effectually their designs, and aware that the Virginians, like themselves, had of late suffered from midnight attacks and murders, which, from their share in the recent unfortunate assault on the Susquehannocks, they were disposed to attribute to them acts of revenge, the Marylanders proposed to the Virginians a union of forces and a joint expedition, for the purpose of subduing their common enemy.

The proposition was readily accepted, and the two provinces raised a force of one thousand men, to march against the Susquehannocks. The Virginia troops were under the command of Colonel John Washington,** the great-grandfather of General George Washington; those of Maryland under Major Thomas Truman.

On the morning of Sunday, the 26th of September, the Maryland forces appeared before the fort; the Virginians probably a little later. In obedience to his instructions from his government, to settle matters with the Susquehannocks by negotiation, if possible, Major Truman sent

* Bacon's Rebellion, by T. M., p. 10.

** John Washington was employed against the Indians in Maryland, and as a reward for his services, was made a colonel."—Washington's Letter to Sir Isaac Heard. Spark's Biog., Vol. 1, p. 547.

two messengers to the fort, one of whom was well acquainted with the Indian language, to invite Harignera, one of their principal chiefs, to a conference. Having ascertained that Harignera was dead, they requested that other chiefs might be sent in his stead; whereupon six* of their leaders came forth, and met the commander of the Marylanders, in the presence of his principal officers and several Indians belonging to neighboring tribes. Upon their demanding the reason of all that hostile array, Major Truman informed them, through the interpreter, that grievous outrages had been perpetrated, both in Maryland and Virginia, and that he had come to ascertain who had committed them. They replied, it was the Senecas. The major then inquired if they would furnish some of their young men as guides in pursuit, as several of the other tribes had already done; but they replied, the Senecas had been gone four days, and by that time, must be near the head of the Patapsco. To this it was answered, that the horses of the white men were fleet, and the Indian runners swift, and both might easily overtake the Senecas. They then consented to furnish the guides.

During this conversation, Col. Washington and Col. Mason came over from the Virginia encampment, and charged the chiefs with the murders that had been committed on the south side of the Potomac; but they positively denied that any of their tribe were guilty. The Virginians, however, far from being convinced by this denial, insisted that three of the Susquehannocks had been positively identified as participants in the outrages which had taken place.

The chiefs then presented to Major Truman a paper and a silver medal, with a black and yellow ribbon attached, which they said had been given to them by former governors of Maryland,** as a pledge of protection and friendship, as long as the sun and moon should

* Some accounts say three or four; but this is the number set down in the impeachment of Major Truman.

** This medal is now exceedingly rare. It is of silver, about the size and half the thickness of a crown piece, with a knob on the edge, and for insertion of a cord or ribbon, so that it may be suspended from the neck. On one side it bears a fine cavalier head, with full flowing locks, and the neck and shoulders covered with armor. Around is the inscription, "DMS. CAECILIUS. BARO. DE. BALTEMORE. ABSOLV. DMS. TERRAE MARIE, ET AVALONIAE." On the reverse is the beautiful head and bust of a lady, with full ringlets, band and necklace, encircled with the inscription, "DNA ANNA. ARVNDELIA. PVLCHERRIMA. ET OPTIMA, CONJUX, CAECILLI, PREDICTI."

endure. These tokens were received by Major Truman with assurances that he was satisfied the Senecas had been the aggressors in the late outrages, and they need feel no apprehension for the safety of themselves, their wives, or their children. The officers, as it was near evening, then returned to their respective encampments, and the Indians went back to the fort.

Early the next morning, Capt. John Allen, a well-known leader of rangers, in the Maryland service, was ordered to proceed with a file of men to the house of Randolph Hanson, one of the victims of the recent outrages, to ascertain if it had been plundered by the Indians, and to bring away any ammunition that might have been left on the premises. Capt. Allen promptly discharged this duty, and returned, bringing with him the bodies of those murdered at Hanson's house.

During his absence the Susquehannock chiefs had again come out of the fort, probably by appointment on the preceding evening, for the purpose of renewing their conference with the Maryland and Virginia officers. They were again charged by the latter, even more vehemently than before, with having been concerned in the outrages in Virginia; but the accusation was again met with an absolute and indignant denial. Upon this, the chiefs were placed in the custody of Maryland and Virginia troops, and the officers retired to another part of the field to deliberate, and decide what course to pursue.

Unfortunately for the prisoners, in the midst of this deliberation Capt. Allen and his detachment made their appearance, bearing with them the mangled bodies, the bloody evidences of savage barbarity and hate. The whole camp was aroused; Marylanders and Virginians alike burned with indignation and thirsted for revenge; the council of officers was broken up; and the feeling which had been stirred up by the sight of their murdered countrymen found vent in an almost unanimous demand for the death of those now in their hands, who were strongly suspected of being guilty parties in this case, and who had been so strenuously denounced by the Virginians as the known murderers of their people.

Before, they might have listened to the voice of reason and justice; now, they thought only of the injuries that had been inflicted by a savage hand, and loudly called for vengeance on those unfortunate representatives of the race, whose confidence in the efficacy of past tokens and the sanctity of present pledges had placed them in their power. They forgot that these men had responded to a professedly peaceful summons; that they had come out with the emblems of friendship in their hands; that they had received assurances of confidence and promises of protection; and, hurried away by the fury of the moment, committed a deed, which, as it violated the laws of God and man, brought upon them the condemnation of their contemporaries, as it must have done of their own consciences, in after moments of coolness and reflection.

Major Truman struggled against the excitement and pleaded for delay, but in vain; the Virginia officers, confident of getting immediate possession of the fort, and professing to believe that they were only by a few hours anticipating the fate of the prisoners, and perhaps depending in part on the effect of so terrible a blow, insisted on the immediate execution of the chiefs. Only one of them, for what reason we are not apprised, was spared; the remainder, five in number, were bound, led forth from the place of their detention, and, to use the plain phrase of our authority, "knocked on the head." So died the chiefs of the Susquehannocks; not with arms, but with the pledges of the white man's protection in their hands; not on the open field and in fair fight, but entrapped by treachery, and encompassed by their enemies; not the death of warriors, but of dumb cattle! They died an ignominious death, yet their executioners, by their act, covered themselves with a thousand-fold deeper disgrace and shame.

It is but just to the rank and file of the Maryland troops to say, that, though one authority speaks of the "unanimous consent of the Virginians and the eager impetuosity of the whole field, Marylanders as well as Virginians, upon the sight of the Christians murdered at Hanson's;"* another, alluding to this unhappy act, states that "Tru-

* Record of Lower House, June 2d, 1676, Maryland.

man's first commands for the killing of those Indians were not obeyed; and he had some difficulty to get his men to obey him therein; and, after they were put to death, not a man would own to have had a hand in it, but rather seemed to abhor the act.”*

If the Virginians were moved to their determination to take the lives of these chiefs by the expectation that it would hasten the surrender of the fort, they greatly miscalculated. When those who had remained behind learned what had been done, hate and desperation contended for the mastery in their hearts; the blood of their slaughtered leaders called for revenge; the proved faithlessness of those who threatened their stronghold, forbade them to hope; they shut themselves up within their palisades, strengthened their defences, and prepared for a desperate resistance. Whenever and wherever the besiegers prepared or attempted an assault, they were ready to meet them; whenever a proposal was made for a conference or surrender, their reply was, “Where are our chiefs?”

The Susquehannocks had been too suddenly attacked to allow them to lay in supplies to stand a long siege, even if their mode of warfare had encouraged or their resources had allowed such a proceeding; and, as the besieging forces cut them off from the surrounding country, they soon suffered from a want of provisions. Not daunted by the prospect of starvation, they made frequent and fierce sallies, to the severe annoyance and loss of the besiegers; and, at last, in their extremity, resorted to the expedient of capturing and feeding upon the horses which belonged to their assailants. These do not appear to have acted with much vigor, either because the first rash step had dampened the ardor of the men, or because it was rather the policy of the commanders to starve than to force the Indians into a surrender. The fort also was too strong to be stormed; its situation on low ground precluded the possibility of undermining the palisades, even if the watchfulness of the besieged would have permitted their approach; and they had no cannon with which to batter it; so that they were compelled, in fact, to await the time

* Record of Upper House, June 2d, 1676, Maryland.

when famine would have so weakened the enemy as to render them an easy prey.

But the Susquehannocks had no idea of such a termination to their struggle. After six weeks of heroic defence, during which they had inflicted much injury on their enemies, with but little loss to themselves, they yielded, not to the prowess of their besiegers, but to the want of food, and prepared, not to surrender, but to evacuate the fort.

It certainly gives a strong color of probability to the charge of neglect of duty on the part of the investing troops, that the Susquehannocks, after destroying everything within the fort that could be of use to the assailants, and leaving behind only a few decrepit old men, marched out under cover of the night, seventy-five in number, with their women and children, passed undiscovered through the lines of the besieging forces and, in their way, killed ten of the guards, whom they found asleep.*

The next morning, the united forces, discovering that the prey had escaped, followed in pursuit; but either could not, or, as our authority significantly hints, "would not overtake these desperate fugitives, for fear of ambuscades." Both detachments, it would seem, were heartily tired of the enterprise, from which neither officers nor men were likely to derive honor or profit. We may, therefore, infer that both parties readily relinquished the pursuit; and, after detailing a sufficient force to occupy the fort and range through the adjacent country, returned to their respective provinces, not merely willing, but desirous, that their exploits during this expedition should pass into oblivion.

Not so the Susquehannocks. They left the last place of their refuge in the soil of Maryland, with a stinging sense of injury, a recollection of solemn obligations slighted and of wrongs yet unavenged.

The voices of their slaughtered chiefs called upon them for the sacrifice of blood; and, as they took their leave of the territory of their enemies, and, crossing the Potomac, directed their route over the heads of the Rappahannock,

*Another account (which seems rather improbable) states that "They marched out in the moonlight with their women and children, and passed the guards without opposition, holloooing and firing at them as they went."—Bacon's Rebellion; Force's Tracts, p. 10.

York, and James Rivers, the tomahawk fell upon settler after settler, until sixty victims were sacrificed, to atone for the slaughter of the heads of their tribe.

One of the sufferers, at the head of James River, was a valued overseer on the plantation of Nathaniel Bacon; and it was the murder of this man, in connection with the disturbed state of the country, which caused Bacon's application for a commission to go against the Indians, a part of whom were Susquehannocks, his subsequent difficulties with Governor Berkeley, his rebellion, and his untimely death, the details of which are familiar to the readers of the colonial history of Virginia.

The Susquehannocks, believing that they have now sacrificed victims enough to redeem their own honor and to appease the angry spirits of their murdered chiefs, are willing to negotiate with the Virginians. They send to the governor a remonstrance, drawn up by an English interpreter, to the following effect:

"First: They ask why he, a professed friend, has taken up arms in behalf of the Marylanders, their avowed enemies.

"Secondly: They express their regrets to find that the Virginians, from friends, have become such violent enemies as to pursue them even into another province.

"Thirdly: They complain that their chiefs, sent out to treat for peace, were not only murdered, but the act was countenanced by the governor.

"Fourthly: They declare, that, seeing no other way of obtaining satisfaction, they have killed ten of the common English for each one of their chiefs, to make up for the disproportion arising from the difference of rank.

"Finally: They propose, if the Virginians will make them compensation for the damages sustained by the attack upon them, and withhold all aid from the Marylanders, to renew the ancient league of friendship otherwise, they, and those in league with them, will continue the war, so unfairly begun, and fight it out, to the last man."

This message to Governor Berkeley, notwithstanding its lofty tone, made no impression, and elicited no reply; and the Susquehannocks were left to fulfill their terrible threat, which they did to the letter. They succeeded in enlisting

in their cause several of the tribes, before friendly to the Virginians, and then addressed themselves, with savage earnestness, to their bloody work. So sudden were their attacks and so awful the inhumanities of which they were guilty, that the frontier plantations were deserted, and it would seem that even Jamestown itself was not safe from their attack.

A line of forts was established along the frontiers, to prevent their incursions; but, like most similar attempts of the colonies, owing to their distance from each other and the want of sufficient garrisons, they failed entirely to afford protection. Bands of savage marauders watched their opportunity, passed between the forts, effected their murderous objects, repassed the lines, and were beyond pursuit, before the garrisons could be alarmed or dispatched to the point assailed.

Yet these were, after all, but the last desperate efforts of a despairing people. Few in numbers themselves, and leagued with tribes feeble indeed in comparison with those against whom their fierce assaults were directed, they could only hope to inflict the utmost injury upon their adversaries, with the certainty of finally perishing, as individuals and as a people, in the contest. Had not Virginia herself been crippled by a civil controversy, they would have been crushed at once; but, even as it was, in the midst of all his distractions and his difficulties with the government, Bacon found time to avenge those of his friends and of the province who had fallen beneath their assaults, and reassure the desponding colonists. He swept the country of the tribes with whom the Susquehannocks had leagued themselves, burned their towns, put a large number of them to the sword, and dispersed the remainder. "The Indians everywhere fled before him; several tribes entirely perished and those who survived were so reduced as never afterwards to be able to make any firm stand against the whites."

Among those who were made to feel the avenging arm of Bacon was the homeless remnant of the Susquehannocks. His residence was on the James River, at a point called "Curles," in Henrico County; and, as has been mentioned, his favorite overseer had been murdered by the savages.

The confidence of the frontier settlers in his courage and ability made them anxious to obtain him as their leader against the enemy. He was willing to take the command of an expedition, but had no commission from the governor for raising a military force. After many difficulties, a commission was promised him, and he commenced his preparations; but, in the midst of them, ascertained that the governor had acted the part of a hypocrite, and did not intend to fulfill his promise.

Roused by this discourteous and distrustful procedure, Bacon at once armed his servants, and called together the frontier settlers, and, placing himself at their head, marched into the forest, to pursue and punish the Susquehannocks. Advancing to a village occupied by a tribe of Occonegies, he was received by them in a friendly manner, and informed in regard to the place where the Susquehannocks had fortified themselves, and prepared for a desperate resistance, in case of an attack. He pushed forward without delay, and found them strongly posted in a rude fort; but this did not deter him. He led his men to the assault, and, after a fierce struggle, succeeded in forcing his way within the fort, and put seventy of its defenders to the sword.* A few of the original tribe may have survived, but the information we possess, relative to the diminished number of the tribe at that period, justifies the conclusion that this severe blow completed their extinction.

So disappear the stout Susquehannocks from the page of aboriginal history. They met the first white man who set foot on their soil, with a firm and unyielding front; they resisted for years his attempts at negotiation or encroachments on their territory; hard pressed at last by powerful enemies of their own race, they yielded to necessity and accepted his proffered friendship; for a quarter of a century they held the sacred pledges of Lord Baltimore, and kept the peace; during which time, driven by the Senecas from their homes, they were forced into a position which brought upon them the hostility of the people of Maryland; they accepted proposals for negotiations, only to find their leaders entrapped and put to

* *Strange News from Virginia, etc., etc.*, London, 1677.

death; they defended themselves bravely in their stronghold, and, rather than surrender, retreated to another territory; and there, after tendering to the authorities, with a proud and unbroken spirit, the choice between the hand of friendship and the tomahawk, accepted the latter alternative, as that alone was left to them. Then came the deadly struggle, in the course of which, though individuals survived and were incorporated into other tribes, as a distinct people they perished, in a manner most glorious to their savage conceptions, surrounded with the victims of their vengeance, in the blaze of the burning mansion, the ruin of cultivated estates, with the shriek and the supplication of the murdered white man ringing in their ears, and their hands red with human blood.

Although apparently "exterminated to the last man," a remnant of the Susquehannock or Andaste tribe appears to have found its way to the west end of Lake Erie on the south shore and are indicated on La Hontan's maps of about the period of 1685. They were probably the same ones referred to in 1695 by the Dutch prisoner from Orange who reported that "one hundred Iroquois warriors had been sent against the Andastes" (Col. Hist. N. Y. IX 601).

1685

1695

These references could be extended but no additional force would be gained by increasing the number. That some of the Susquehannock occupied the West Branch of the Susquehanna River after abandoning their position near Washington Borough appears almost certain; the affirmative evidence as to the approximate position is abundant and conclusive.

The Conestoga (Kanastöge—"at the place of the immersed pole") were survivors of the once mighty Susquehannock who returned to their homeland on the Susquehanna River in Lancaster County. According to Colden they were the captives who had been carried northward by the victorious Five Nations in 1675. He claims they remained among the Oneida until they lost their language and were finally allowed to return to Conestoga, their ancient town (18). Other authorities claim they were survivors of the Maryland refugees who finally managed to get back to their homeland. Wherever they came from they were a sad remnant of a once mighty race. Pressed on all sides by white settlers and groups of Indians, they once

held in contempt, they slowly degenerated until at the close of the year 1763 they numbered only twenty souls. At that time rioters inflamed by accounts of the Indian war raging along the Pennsylvania frontier, massacred this small band where they had taken shelter in the jail yard in the city of Lancaster. On that day the last known group of Susquehannocks passed out of existence.

NOTES ON LANCASTER COUNTY ARCHAEOLOGY

PRELIMINARY reconnaissance of the Pennsylvania Historical Commission's expedition in the area to be covered by water in the basin of the new Safe Harbor Dam revealed that authentic archaeological data could not be recorded in territory reached by the Susquehanna River since Indian occupation. Floods and heavy changing deposits of sediment had eradicated human stratum in situ. The first few test holes in the area revealed this condition but it was important for the expedition to verify this fact without question so every island was thoroughly examined without establishing any authentic archaeological criteria.

This paper will consider first of all brief field accounts of the archaeological explorations in Lancaster County during the years of 1930-31, in the order in which Indian sites were investigated. The work on each station will be described together with the type specimens gathered, and the facts that may be derived from them.

ROBERTS FARM SITE

MANOR TOWNSHIP, LANCASTER COUNTY

The first site archaeologically investigated after the work in the area to be covered by water was finished was exactly

ROBERTS SITE

PLATE 1



ROBERTS FARM SITE ON CONESTOGA CREEK

three miles above the mouth of Conestoga Creek on J. C. Roberts farm (pl. 1). Excavations were started here and continued for five days. The Indian occupational surface indications, consisting of numerous fragments of white quartz, flint chips and broken artifacts extended across a hollow north to a knoll running out into the Conestoga Valley on the Knepp farm. Walnut Hollow spring still famous for its pure water, lay exactly in the center of the site and was probably responsible for its Indian occupation.

PITS

Two pits were excavated and recorded on the site and in

ROBERTS SITE

PLATE 2



A LARGE FIRE PIT ON THE ROBERTS FARM SITE

these were located the first indications of an Iroquoian archaeological cultural horizon for the region (pl. 2).

PIT NO. 1

Using a very large white quartz boulder on the southeast edge of the Roberts field as a bench mark, Pit. No. 1 was located exactly North (magnetic) 241 ft. The disturbance in the earth was well indicated from the surface to its greatest depth of 3 ft. 9 in. The pit was almost round and averaged 4 ft. 7 in. in diameter at the top, tapering to 3 ft. 8 in. at the bottom. The walls were smooth and the bottom round and level.

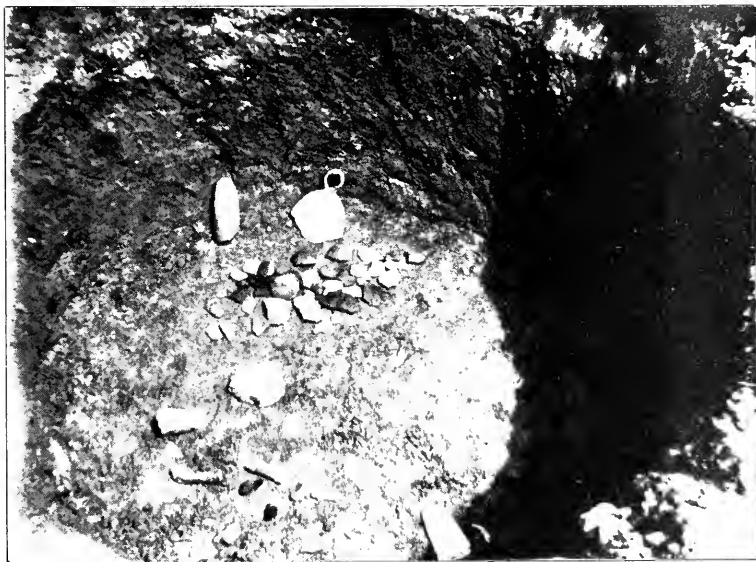
On the floor of this storage pit, resting against the north wall, was an iron hoe. Fragments of several pottery vessels, made of a hard and brittle ware with shell filler, were scattered throughout the disturbance. One broken stone celt, a bear jaw bone, with teeth well preserved, and innumerable fragments of animal bone, charred corn, beans and a fragmentary flat smoothing stone were recovered (pl. 3).

PIT NO. 2

This disturbance was unquestionably a fire pit and may have been located inside a dwelling. It was unusually large, measur-

ROBERTS SITE

PLATE 3

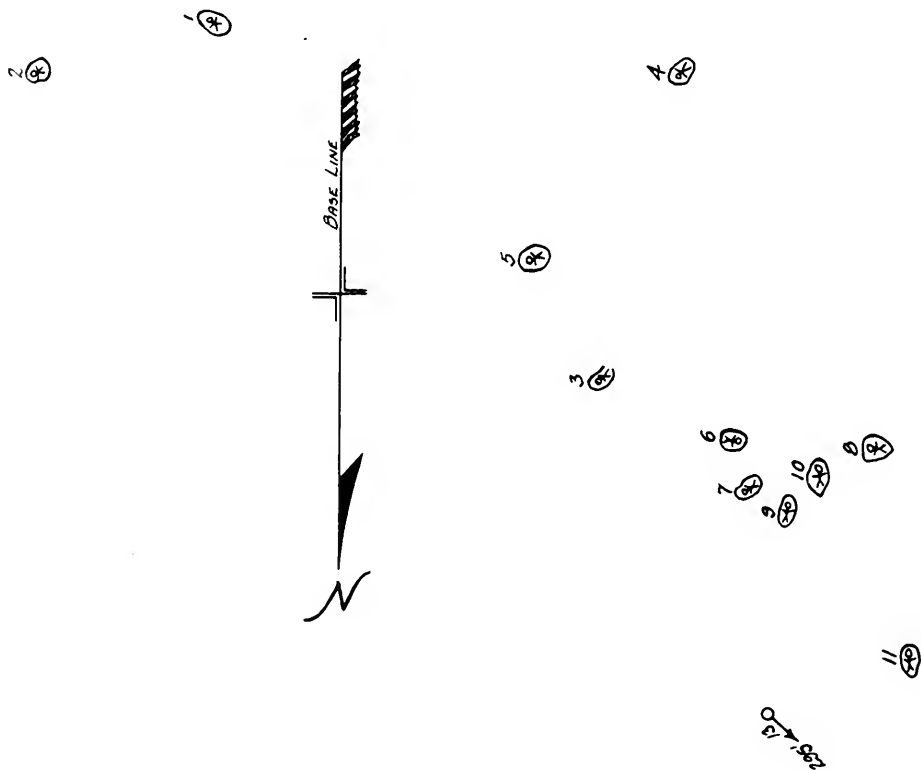


STORAGE PIT CONTAINING AN IRON HOE AND IROQUOIAN POTTERY

ing 9 ft. 6 in. by 9 ft. in diameter and its depth varied from 1 ft. 10 in. to 2 ft. At various levels in the pit were mussel shells and broken animal bones. Below the 1 ft. 2 in. level, covering the floor and approximately 5 in. thick, was a layer of wood ashes and charcoal containing calcined bones, charred nuts and fragments of pottery. Resting on the floor in the northern end was a box turtle shell (*Cistudo Carolina*).

CONCLUSIONS. The objects recovered from this site indicated a minor, late historic Iroquoian Indian occupation. It

SHENKS FERRY BURIAL SITE
 SCALE IN FT. 1' 5' 10' 15' 20'



may have been used as a camping place during the Conestoga period. The iron hoe showed white contact, and the friable shell tempered pottery was similar to that found on late, historic Susquehannock sites to be described later.

SHENK'S FERRY SITE

CONESTOGA TOWNSHIP, LANCASTER COUNTY

Chart 1

This Indian site, one-half mile below Shenk's Ferry on the Susquehanna River, was on a heighth of land between two branches of a small stream known as Grubb Creek (pl. 4).

SHENK'S FERRY SITE

PLATE 4



SHENK'S FERRY SITE ON GRUBB CREEK

It was approximately three-quarters of a mile from the mouth and on the old David Eishelman property. Chart 1.

Surface indications of aboriginal occupation were chipped quartz, pottery fragments and occasional arrowpoints. Using a magnetic north-south base line the south stake of the site was located $165^{\circ} 94$ ft. from the southeast side of a very large poplar tree on the edge of the east branch, exactly 300 yds. from the fork. Almost directly south of this tree on the east side of the stream is the electrical transmission line leading to Holtwood. The property is owned by the Pennsylvania Water Power Corporation at the present time.

Test holes and trenches were started on the south edge of a knoll and carried across the field. The sandy soil was packed hard and contained a scattering of mica to a depth of approxi-

mately 15 in., where a hard black mica shale was encountered, this averaged 18 in. in depth to the hardpan (pl. 5).

BURIALS

BURIAL NO. 1

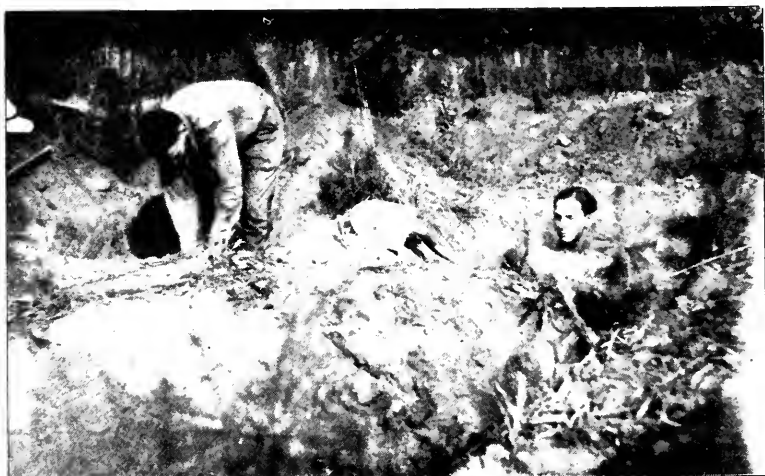
Width of disturbance 3 ft. 5 in. by 4 ft. 2 in.

Depth to skull 1 ft. 4 $\frac{1}{2}$ in.

The first burial found was that of an old female. It was extended lying partially on its right side facing north. The

SHENK'S FERRY SITE

PLATE 5



TEST PITS ON THE SHENK'S FERRY SITE

femur, fibula and tibia were slightly flexed to the right. The right arm was extended at the side and the hand contained an earthenware pipe. The left arm crossed the body at the lumbar vertebrae and the hand rested upon the right pelvis. Between the left clavicle and the partially crushed temporal bone a turtle shell was found containing two earthenware pipes and some white quartz chips. One of these pipes was a crude tubular type and the other slightly bent at the stem near the bowl (pl. 6).

Many of the bones of this burial were broken and decomposed, and the skull was crushed so that even restoration would not have made it of value for anatomical measurements.

BURIAL NO. 2

At a depth of 2 ft. 6 in. a previously disturbed burial of a

young person lying on right side was exposed. The knees were flexed and the left patella touched the proximal end of the right ulna.

BURIAL NO. 3

At a depth of 1 ft. 9 $\frac{1}{2}$ in. a previously disturbed grave which contained disintegrated human bones was recorded. The occiput and body bones indicated an aged person. A triangular arrowpoint was found beneath the undisturbed fourth cervical vertebrae, and a section of the upper femur was about 6 in. above the pelvis.

SHENK'S FERRY SITE

PLATE 6



BURIAL 1, SHOWING TUBULAR PIPE AND OTHER OBJECTS AS FOUND

BURIAL NO. 4

At a depth of 2 ft. 10 $\frac{1}{2}$ in. the remains of a young female was found. She was lying on her back with head twisted to the left side, legs flexed to the left and arms at side with the hands resting on the pelvis. The skull was in very poor condition, and no artifacts were found (pl. 7).

BURIAL NO. 5

At a depth of 3 ft. 5 $\frac{1}{2}$ in. a middle aged male was found lying on his back with head turned to the right. The ulnas



BURIAL 4, SHOWING FLEXED POSITION OF YOUNG FEMALE



BURIAL 5, SHOWING EXTENDED MALE IN EXCELLENT CONDITION

and radii of both sides were bent back with hands resting on clavicle. The right leg was extended and left leg slightly flexed. A triangular arrowpoint was on the hardpan between the left pelvis and the floating rib; another was with the bones of the left foot. Pottery fragments were recorded 3 in. from the right radius.

This burial was in excellent condition. The red soil in which it was found had stained the bones, which although light in weight, were hard and solid. Nearly every bone in the body was secured (pl. 8).

A very careful inspection was given to all the bones to detect salient morphological characters and an anthropometric study was made on the skull by Mr. William Richie, Rochester Museum of Arts and Sciences.

Crania Notations—Burial No. 5

Length, max. 17.9 cms.
 Breadth, max. 14.0
 Height, basion-bregma 14.8
 Capacity 1400 c.c.
 Cranial module 15.5
 Circumference, max. (above supraorbital ridges) 50.4
 Nasion-opisthion arc 37.1
 Length, total (chin-nasion) 10.6
 Length, upper (prosthion-nasion) 6.7
 Breadth (dia. bizyg., max.) 14.0
 Diameter frontal 9.1

Nose

Height 5.25
 Breadth 2.4
 Basion-prosthion line 9.2
 Basion-subnasal point 8.7
 Basion-nasion 10.5
 Prosthion-nasion height 6.7
 Prosthion-subnasal point height 1.7

Orbits

Height 3.2

Breadth 4.25

Mandible

Height at symphysis 3.1

Thickness at 2nd left molar 1.35 (alveolus atrophied)

Diameter bigonial

Breadth of ramus, min. 3.3

Foramen Magnum

Diameter, mean 3.5

Palate

Length 4.5

Breadth 4.0

Indices

Cephalic 7.82 Mesaticephalic

Height-length 82.5 Hysicephalic

Height-breadth 105.7

Facial, total 75.7 Chamaeprosopic

Facial, upper 47.8

Orbital 75.2 Microseme

Nasal 45.7 Leptorrhine

Facial angle 81° OrthognathousAlvolar angle 65°

Palatal 88.8

All sutures were simple; occlusion beginning on exterior above lambda. Second bicuspid and all but third molars lost from mandible. In the upper jaw all right and left M^1 and M^2 missing. Advanced degree of wear on all teeth. Perforation into antrum through socket of right M^3 (dia. 5.5 m.m.), due to infection.

BURIAL NO. 6

At a depth of 2 ft. 11 in. human remains were uncovered. The sex was indeterminate. The body was flexed on the left side facing north with the top of the head to the west. The right arm rested on the vertebrae with hand on the seventh cervical. The right and left legs were flexed. The skull was partially crushed and the inferior maxillary missing. The general condition was very poor; no deformations were noted, and no artifacts found.

Crania Notations—Burial No. 6

Mesocephalic—probably a very old man. The skull was thick, heavy and solid with sutures extremely tight and almost indistinct. The left temporal was solid with the parietal, and the right decayed and fragmentary. The sagittal and lamboid sutures were flexible and only traces of the coronal appeared. The nasal bones were intact. The globella and connecting bones, usually decomposed, were also intact. All molars were

extremely prominent, and the superior maxillary exhibited the loss of two on left side and all on the right side some time prior to death. Only the roots of canine incisors remained and the bicuspid on right side were partially decayed. The inferior maxillary had three molars missing on left side prior to death, and all remaining teeth were badly worn and decayed.

On the left side next to the sagittal suture was evidence of an injury inflicted a long period before death, evidently caused by a blow from some pointed implement. It penetrated nearly through the skull. To the right of this $\frac{1}{4}$ in. and extended $1\frac{1}{8}$ in. diagonally across the frontal toward the supraorbital ridge of the left side was a mark showing an injury, apparently a deep cut. Directly above the globella was a depression $\frac{1}{4}$ in. in diameter and $\frac{1}{16}$ in. deep. To the right of this $\frac{1}{2}$ in. were two more small depressions, these appeared to have been caused by a blow from a small blunt instrument. None of these injuries appeared to have caused death.

BURIAL NO. 7

At a depth of 2 ft. 8 in. the remains of an old man were encountered. Field measurements indicated a dolichocephalic index for the skull. The body was extended lying on back with top of head to the east and facing south. The right arm was extended at side with hand resting on left pelvis. The left arm was bent underneath the body. Near the top of the head on the left side a small hole entered the skull, evidently made some time before death. Below this hole on the frontal, was a cut also inflicted prior to death. In the frontal bone directly in the center $1\frac{1}{2}$ in. above the eye socket was a dent $\frac{1}{8}$ in. deep and $\frac{1}{2}$ in. in diameter. Teeth were worn down and showed partial decay. All molars but one were missing.

Red paint was found scattered through the soil in the grave and the bones were resting upon a bed of wood ash. Removal of vertebrae showed indication of arthritis.

BURIAL NO. 8

At a depth of 2 ft. 4 in. a previously opened and rifled grave was recorded. The skull and most bones were missing. The left femur was deformed, and one small potsherd was above the remains.

BURIAL NO. 9

The remains of a middle aged female were recorded at a depth of 2 ft. 4 in. Field measurements on the skull proved it to be dolichocephalic. The body was extended lying on back with top of head to south facing east. The right and left arms were extended by side close to body. The right leg was flexed, and the left leg extended. The skull was thin and crushed on the right side. The upper jaw was in good condition, and the inferior maxillary was well formed and showed but little wear. Indications of decomposition in several molars were noted. The general condition of the bones was very poor. No deformations were recorded.

Near the top of the head was a box turtle shell rattle containing seventeen white quartz pebbles. On the top of the rattle was a crudely decorated earthenware pipe.

BURIAL NO. 10

At a depth of 3 ft. the remains of an adult male were found, extended with the top of the head to south facing east. The right arm was extended with hand near the pelvis. The left arm and legs were also extended. General condition was fair with the exception of skull. The left tibia was deformed and attached to the tibia by a solid fusion of bone 3 inches from tarsal surface. This fusion may have been due to an injury while the person was young as the two bones had apparently been forced against each other and remained until a solid growth formed. No artifacts were recorded.

BURIAL NO. 11

At a depth of 1 ft. 6 in. fragmentary human remains were recorded. The skull indexed dolichocephalic. The posture was full flexed, heading east and facing north. The right arm was flexed and hand rested in front of jaw. The left arm was flexed with hand resting on the distal end of the right humerus. The general condition of all bones was very poor with the exception of the skull.

This burial was underneath a fire pit, and the ashes and animal bone extended to within 6 inches of the remains. At the right scapula fragmentary remains of a turtle shell cup were found.

BURIAL NO. 12

A male was found at a depth of 2 ft. 8 in., extended on back with top of head to east facing up and slightly to the north. The skull indexed brachycephalic. The right and left arms were extended down the sides to the pelvis. The right leg was extended with the foot resting over left astragalus. The phalanges of the hands and feet were missing together with portions of the ulna. The tips of the right scapula and vertebrae were also missing together with portions of pelvic bones. The burial was underneath a fire pit and lying at the side of the head was a coil ear ornament made of brass and some small shell beads (pl. 9).

Crania Notations—Burial No. 12

The skull had an unusually large and prominent zygomatic

SHENK'S FERRY SITE

PLATE 9



BURIAL 12, SHOWING BRASS EAR ORNAMENT AS FOUND

arch. Two sets of pre-molars were fully developed in the inferior maxillary directly opposite each other. The gonion and ganathion were unusually heavy and the basilaris plane of the inferior maxillary was $4\frac{1}{2}$ in. Several molars were missing, evidently prior to death. Many teeth showed decay and all were worn.

BURIAL NO. 13

A middle aged female was found at a depth of 2 ft. 8 in. with dolichocephalic index. The remains extended full length with top of head to the east and facing north. The right arm was flexed at the side and bent back at the elbow so that the hand rested beneath the inferior maxillary. The left arm was extended down the side turning up at the elbow and crossing the sternum with the hand resting on the right elbow. The right and left legs were extended. A laboratory examination showed enamel of molars completely worn away. The general condition of the bones was very poor.

ASSOCIATED ARTICLES. One foot above the bones in the side of the wall was a well worn grinding stone. The remains were covered by a very large flat rock 16 in. from the surface, and a smaller slab rested directly over the skull.

PITS

A total of forty-three pits were explored on this site and a wide variety of objects was recovered from them. These pits were of the usual type found on Algonkian and Iroquoian sites in the east and were used for storage and fireplaces, the latter being indicated by shallowness and an abundance of wood ash and charcoal. All were carefully located and explored. Elevations and positions of artifacts recovered were taken and are considered in the final analysis of the site. A brief tabular description of each pit with its cultural horizon, size, depth, use and contents follows:

DESCRIPTION OF PITS FOUND ON SHENK'S FERRY SITE

Pit No.	Disturbed Area	Depth	Use	Horizon	Contents
1	3 ft. 5 in. by 4 ft. 2 in.	1 ft. 3 in. to 2 ft. 7 in.	Storage	Algonkian	Sherds near surface, charcoal, animal bone. A pointed bottom pottery vessel.
2	2 ft. 4 in. by 3 ft. 8 in.	1 ft. 7 in.	Storage	Algonkian	Charcoal, sherds, quartz chips.

<i>Pit No.</i>	<i>Disturbed Area</i>	<i>Depth</i>	<i>Use</i>	<i>Horizon</i>	<i>Contents</i>
3	3 ft. 9 in. by 4 ft. 1 in.	3 ft. 4 in.	Fire	Algonkian	Charred beans (about 3 qts.)
4	2 ft. 10 in. by 3 ft. 9 in.	1 ft. 9 in.	Indeterminate	Indefinite	Sherds, animal bone, black flint chips, turtle shell, burned mica, 7 small fragments of clay pipes.
5	2 ft. 10 in. by 3 ft. 8 in.	1 ft. 10 in.	Storage	Algonkian	Charcoal, sherds quartz chips, 1 unfinished arrow-point.
6	4 ft. 5 in. by 6 ft. 3 in.	2 ft. 5½ in.	Storage	Algonkian	Sherds, 1 fragment of a hammerstone, 1 fragment of a celt, 1 fragment of an axe, 2 triangular arrow-points, fragmentary turtle shell, 2 pipe stems.
7	2 ft. 5 in. by 3 ft. 2 in.	1 ft. 8 in.	Storage	Algonkian	Animal bone, 1 bone awl worked turkey leg bone.
8	3 ft. 8 in. by 6 ft.	1 ft.	Storage	Algonkian	Sherds, 1 bone bead, 9 crude triangular arrow-points, 2 fragments of a pitted hammerstone, 1 decorated earthenware pipe burned bone, 1 quartz scraper.
9	3 ft. by 3 ft.	3 ft.	Storage	Algonkian	At 2 ft. along the south wall a stone pestle, 1 broken celt, 2 grain mullers, animal bone and worked turkey bone.
10	2 ft. by 2 ft.	2 ft. 4 in.	Storage	Algonkian	Sherds at 18 in. animal and bird bone, quartz fragments.
11	2 ft. 4 in. by 2 ft. 6 in.	11 in.	Fire	Algonkian	Charcoal, sherds, 1 hammerstone, quartz ash.
12	2 ft. 4 in. by 2 ft. 10 in.	12 in.	Fire	Algonkian (late)	Charcoal, burned clay, ash, 5 sherds, deer bones.

Pit No.	Disturbed Area	Depth	Use	Horizon	Contents
13	2 ft. 4 in. by 3 ft. 1 in.	2 ft. 10 in.	Fire	Algonkian	Burned clay. sherds, animal bones, fish bones, bird bones, 1 bone awl, worked antler, 1 smoothing stone, 1 muller, 1 triangular quartz arrow-point, cracked firestones.
14	1 ft. 8 in. by 1 ft. 10 in.	2 ft.	Fire	Algonkian	Ash charcoal, sherds, animal bone, 1 piece quartz.
15	3 ft. 11 in. by 4 ft. 1 in.	2 ft. 3 in.	Indeterminate	Algonkian	Worked turkey bone, sherds, animal bone.
16	3 ft. 2 in. by 3 ft.	2 ft. 3 in.	Storage	Algonkian	Unusually dark earth, large deer bones 1 turtle shell, sherds, 1 pipe bowl, 1 pipe stem, quartz fragments, deer antler.
17	4 ft. 8 in. by 4 ft. 10 in.	1 ft. 11 in.	Fire	Algonkian	Charcoal animal bone, sherds, quartz flakes, ash.
18	4 ft. by 4 ft.	2 ft. 2 in.	Fire	Indeterminate	Animal bone, charcoal ash.
19	3 ft. by 2 ft. 7 in.	1 ft. 10 in.	Fire	Algonkian	Animal bone, sherds, ash.
20	3 ft. 7 in. by 4 ft. 4 in.	1 ft. 7 in.	Fire	Algonkian	Sherds, firestones, animal bone 1 hammerstone.
21	2 ft. 6 in. by 2 ft. 8 in.	2 ft. 7 in.	Storage	Algonkian	Charcoal, sherds, 1 pipe stem, bone, flint chips.
22	5 ft. 4 in. by 6 ft. 10 in.	2 ft. 2 in.	Storage	Algonkian	Charcoal 1 pipe bowl fragment, part of small pottery vessel, sherds, animal bone, 1 large pottery vessel (broken).
23	3 ft. 4 in. by 3 ft. 11 in.	1 ft. 2 in.	Fire		Ash animal bone, quartz and firestones.
24	1 ft. 10 in. by 1 ft. 10 in.	2 ft. 11 in.	Fire	Algonkian	Charcoal, animal bone, sherds, 1 bone awl, ash.
25	3 ft. 6 in. by 3 ft. 8 in.	1 ft. 3 in.	Fire	Algonkian	Charcoal sherds (2), deer bone, ash.

<i>Pit No.</i>	<i>Disturbed Area</i>	<i>Depth</i>	<i>Use</i>	<i>Horizon</i>	<i>Contents</i>
26	3 ft. 4 in. by 3 ft. 2 in.	1 ft. 4 in.	Storage	Algonkian	Deer skull, charcoal, shell, pottery deer teeth, chipped quartz.
27	3 ft. 2 in. by 3 ft. 10 in.	1 ft.	Fire		Charcoal, pottery, firestones deer bone, antler.
28	4 ft. 8 in. by 4 ft. 6 in.	1 ft. 3 in.	Fire	Algonkian	Charcoal, sherds, fragment of pipe stem, ash.
29	3 ft. 4 in. by 3 ft.	1 ft. 6 in.	Storage	Algonkian	Charcoal turtle shell fragments, antler, sherds, quartz.
30	2 ft. 7 in. by 2 ft. 6 in.	2 ft. 1 in.	Storage	Algonkian	Charcoal, sherds, animal bone, 1 awl, 1 bone bead, worked stone.
31	3 ft. 7 in. by 5 ft. 1 in.	1 ft. 8 in.	Storage	Algonkian	Charcoal, sherds, pipe stem fish hook blank.
32	2 ft. 2 ft.	1 ft. 4 in.	Storage	Algonkian	Animal bone, 2 snail shells, bird bone, sherds (2 vessels), antler (deer).
33	3 ft. 7 in. by 3 ft. 7 in.	3 ft. 1 in.	Fire	Algonkian	Charcoal stones (chipped), animal bone, ash.
34	2 ft. 10 in. by 4 ft.	3 ft. 3 in.	Storage	Iroquoian	1 stone pestle, 1 hammerstone, 1 pot bottom 1 pipe stem, 1 comb, human effigies, on back, worked antler, nuts red ochre, charred beans, corn cobs, sherds, animal bone, 1 turtle shell cup, 6 triangular arrow-points.
35	4 ft. 2 in at top and 3 ft. 4 in. at bottom	4 ft. 8 in.	Fire and Storage	Algonkian	Wood ash, animal bone, 1 pestle, 1 muller blue clay, sherds, 1 bone awl.

<i>Pit No.</i>	<i>Disturbed Area</i>	<i>Depth</i>	<i>Use</i>	<i>Horizon</i>	<i>Contents</i>
36	4 ft. 2 in. by 4 ft. 2 in.	4 ft. 11 in.	Storage	Mixed	Sherds, 1 hammerstone, 3 triangular arrowpoints, 10 pipe stems, 3 bone beads, 1 copper bead (4 in. below surface), squirrel skull, fish bones, charred wood, 1 deer antler (complete). 2 pieces brass.
37	4 ft. 7 in. by 4 ft. 5 in.	3 ft. 4 in.	Fire		Sherds, ash, charcoal.
38	5 ft. 2 in. by 5 ft. 5 in.	2 ft. 4 in.	Storage	Iroquoian	Sherds, animal bones, fish bones, 1 turtle shell cup fragment, 3 bone beads, 2 pottery markers.
39	3 ft. by 3 ft.	1 ft. 6 in.	Storage		Sherds (1 vessel), turtle shell, bone bead.
40	6 ft. by 8 ft. 3 in.	1 ft. 8 in.	Fire	Iroquoian-Algonkian	Charcoal ashes, sherds, 1 bird bone awl, 3 triangular arrowpoints, 1 pipe stem, 1 bone awl (carbonized), quartz fragments, 4 shells, celt (fragmentary).
41	2 ft. 6 in. by 2 ft. 6 in.	1 ft. 3 in.	Fire		Sherds, charcoal ash.
42	3 ft. by 3 ft.	1 ft. 8 in.	Storage	Iroquoian-Algonkian	Charcoal, sherds, deer bone.
43	5 ft. 2 in. by 5 ft. 4 in.	3 ft. 9 in.	Fire	Mixed Iroquoian and Algonkian	Charcoal, sherds animal bones, ash.

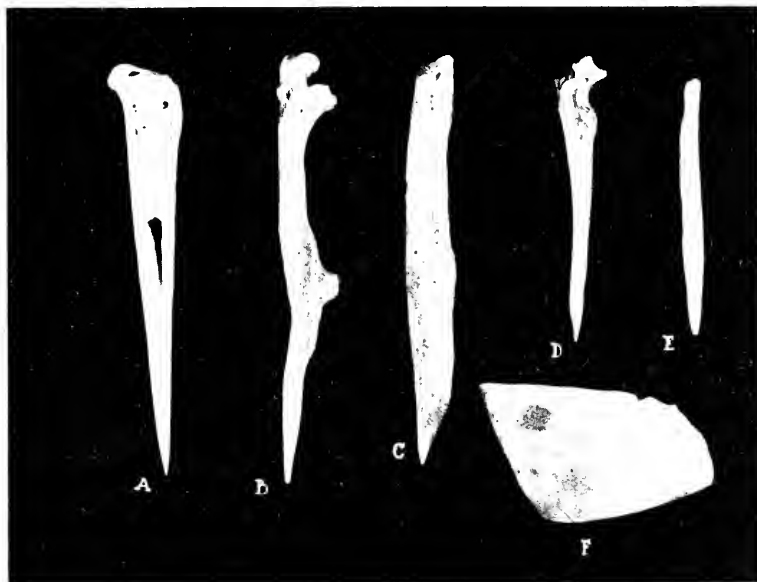
ARTIFACTS

BONE AND ANTLER OBJECTS—On most pre-historic Algonkian sites worked bone objects occur although in no great numbers. Three types of bone awls were recorded at Shenk's Ferry. Those with natural joints as handles predominated, and a wide variation of length and size in this form was noted (pl. 10, figs. A-D). A few fortuitous splinter types were found and one smoothly finished spatulate. Turkey wing bones were favored for awl making.

BEADS—Three bird bone beads were in Pit 38, which had an Iroquoian horizon; they are exceedingly rare on pure Algonkian sites. Two hollowed bone tubes, one from a deer and the other from a bird, were recorded in pits with doubtful horizons, and showed the use of crude reaming tools. The bird bone was probably intended for future use in bead making.

SHENK'S FERRY SITE

PLATE 10



OBJECTS MADE OF BONE, ANTLER, AND TURTLE SHELL

TURTLE SHELL—Several turtle shells that had been used as containers were in the pits and one in grave. A well preserved shell, with the plastron in place, had sixteen small quartz pebbles inside and was undoubtedly used as a rattle. A small fragment of a plastron was notched on one edge, and beveled and pointed on another. It was probably a combined pottery smoother and decorator (pl. 10, F).

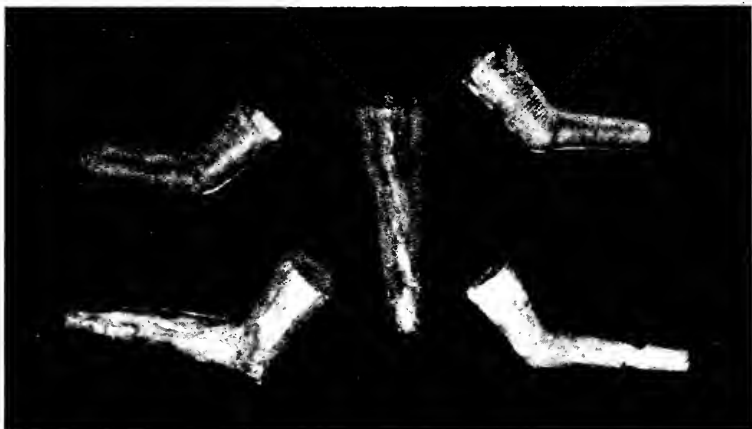
ANTLER—Several large pieces of deer antler cached in the pits showed that this material was utilized, probably for implement making. One small fragment of a cone shaped piece suggests its possible use as a projectal point. The tips of antler tines were often cut off and hollowed out to make conical arrowheads; they are found occasionally on Algonkian sites.

COMBS—A small fragment of a handsome back comb, with two human figures on it, was in Pit 34, which had an Iroquoian horizon. Many similar combs were recorded from definite Iroquoian sites and will be described in detail later in this paper.

SHELL—A large shell bead from Pit 34 and several smaller ones from Burial 12 were recovered. No worked shell artifacts were found in the purely Algonkian part of the site, although fresh water mussels were plentiful in many of the pits.

SHENK'S FERRY SITE

PLATE 11



EARTHENWARE PIPES RECOVERED FROM THE PITS AND BURIALS

PIPES—The earthenware pipes recovered from the pits and burials on the Shenk's Ferry site were of the monolithic elbow type, with the exception of the crude tubular pipe found with Burial 1. The average angle of the elbows was about 35°. All the pipes were short and one had a squared stem near the bowl (pl. 11). With the exception of the archaic tubular pipe, which had a roughly made bowl, still showing that the clay had been baked around a small corncob, the five pipes recovered conform to established advanced Algonkian types.

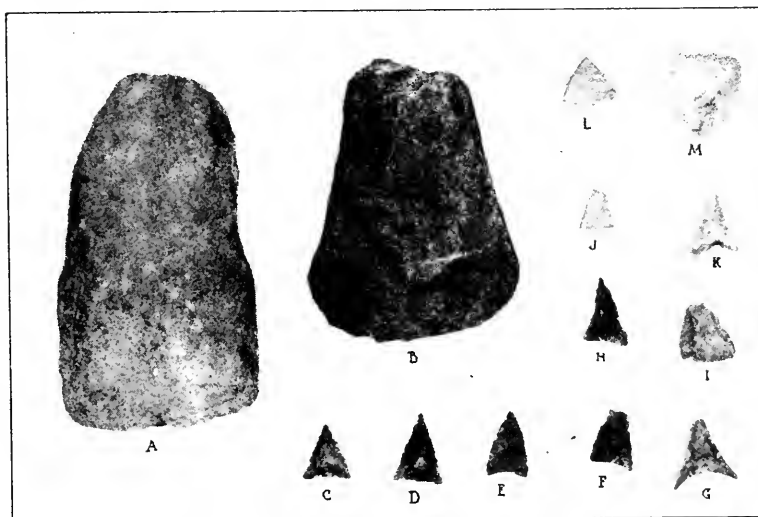
STONework—Pitted hammerstones of a common variety were plentiful on this site. Four rudely shaped implements recovered from the pits may have been blanks for celts or used as crude hoes (pl. 12 a-b). A single fragment of a grooved axe made of a water-worn river pebble, several rough mullers and crude broken pestles show that these people did not excel in the art of stone working.

Arrowpoints were plentiful in the pits with Iroquoian horizons. Those recovered with the burials were chipped triangular types and may have had an Iroquoian origin (pl. 12 e-1). Only the crude white quartz points, rudely triangular in shape, can be classified as Algonkian (j-l).

On most transitional Algonkian sites of this period the triangular point is less common than the notched types. When found they are usually heavier and broader compared with

SHENK'S FERRY SITE

PLATE 12



STONE OBJECTS FROM PITS AND BURIALS

the delicate Iroquoian forms. A crude quartz scraper from Pit 8 was the only one recorded (pl. 12, m).

TRADE ARTICLES—The only objects found which indicated contact with white men were with the intrusive late burial No. 12, near the surface of the ground, or in pits with an Iroquoian horizon. A coil of rolled brass with the burial was an ear ornament, and two pieces of brass were recorded in Pit 36 which had a mixed cultural horizon.

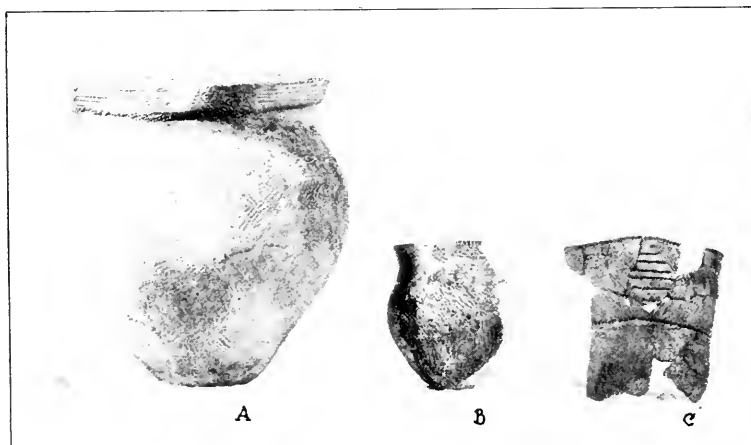
FOOD—A few charred cobs of maize and charred beans were in several of the fire pits. About three quarts of the latter were recorded in bulk in Pit 3.

POTTERY—The archaic form of pointed bottom Algonkian pottery, similar to that recovered and restored from this site, has been traced by archaeological research from known his-

toric stations, with European contact, back to prehistoric stations on which all contact is lacking (pl. 13-a, b). There are, of course, variants of this form but they are unusual. The Shenk's Ferry pottery ran true to established bottom Algonkian type but showed indications of intrusive designs. The necks of several of the vessels found were crudely incised with chevron and herring bone patterns, and cord wrapped stick

SHENK'S FERRY SITE

PLATE 13



POTTERY VESSELS FROM THE SHENK'S FERRY SITE

Figures A and B are True Algonkian Types (Height of A, 13½ inches; B, 5¾ inches)

and cob rolled designs were common. Iroquoian contact was shown by heavy collars, punctate design and restricted necks on some of the vessels. The notched rim was absent, and collar construction and decoration crudely done, indicating a minor influence (pl. 13, c). The vessels, with few exceptions, were large and the ware, brittle. All filler was crushed stone and as near as could be determined the coil construction method was used.

It is unusual to find pottery with Algonkian burials in the northeastern area, and as the few shreds with Burial 12 were from different vessels, they may not have had any particular mortuary significance, or may have been intrusive from the fire pit on the top of this burial.

Many characteristic Algonkian objects, usually recorded, were missing at Shenk's Ferry. As a general rule stone artifacts preponderate over those of bone and antler on a site of this period.

CONCLUSIONS

The Shenk's Ferry site was occupied by Indians with a late prehistoric Algonkian culture influenced by a minor Iroquoian contact. Out of the thirteen burials found only seven skulls could be field indexed with any degree of accuracy. Out of the seven, four indexed dolichocephalic, two mesocephalic and one brachycephalic. The latter was Burial 12 which had unquestionably some white contact. The type variance in the seven skulls may indicate an admixture but no definite valid conclusions concerning the physical type of this group of people can be determined from field observations, and the few complete skulls recovered. The fact that four fall into a dolichocephalic index presents a puzzling problem. The material culture of the site is preponderantly Algonkian and the physical horizon dolichocephalic, usually associated with Iroquoian cultures. The one skull that was brachycephalic was from the only burial on the site that had definite white contact. There is a tendency toward roundheadness among most prehistoric Algonkian groups but the old belief that all Iroquois were brachycephalic has been questioned by modern physical anthropologists.

The artifacts recovered indicated an Algonkian culture merging into one influenced by Iroquois contact. As there are no definitely established archaeological criteria in this region we will have to assign the site, culturally, to an indefinite late pre-contact period corresponding to the Third Period Algonkian in New York State, with the exception of Burial 1, with its crude tubular pipe which belongs to a more archaic period.

The Shenk's Ferry site is the only one that has been explored and recorded near Big and Little Indian rocks. It may be possible that its transient occupants had something to do with the carvings left on the rocks. The present village of Pequea is on the main river a short distance below Shenk's Ferry and informants claim that it covers a large Indian site. If this is true, and there is no way of determining whether it is or not, the people who lived there would have been the logical ones to have left their records on the rocks. The Shenk's Ferry site was a very small village and probably used as a hide-away when it was dangerous to live on the main river.

STRICKLER SITE

MANOR TOWNSHIP, LANCASTER COUNTY

Chart 2

From the aboriginal point of view the region around Washington Borough, Lancaster County, Pennsylvania, must have been unusually attractive as a place of habitation. Located above the swift water between what is now Safe Harbor and Turkey Hill, the Susquehanna River furnished fish in abundance, and also constituted not only a natural migration route but a highway for ready transportation and trade between the Indian tribes which at different times settled along its banks. The fertile bottom land along the river still yields abundant crops of corn and tobacco to modern farmers as it undoubtedly

STRICKLER SITE

PLATE 14



STRICKLER FARM—THE FIRST SUSQUEHANNOCK SITE EXPLORED

did to their Indian predecessors, and the once plentiful supply of game in this region commenced to disappear only within the memories of men now living. That the Indians appreciated these natural advantages is evident from the number of sites indicating ancient occupancy found scattered along the banks of the river between Turkey Hill and the village of Washington Borough.

For many years this region has been the "happy hunting ground" of amateur archaeologists. Tramping up and down the shores of the river, it was possible for them to pick up innumerable objects illustrating early Indian life. Unfortunately, many of these relic hunters, not satisfied with the artifacts found on the surface, started to dig. As a result, many of the sites were disturbed and much of the prehistory of the ancient people who lived in this area destroyed.

Archaeological work was started in the Washington Borough area in May 1931. The first site explored was on a

STRICKLER SITE

PLATE 15



THE SITE WAS STAKED OUT IN 10 FT. SQUARES AND EVERY OBJECT
RECOVERED CAREFULLY RECORDED

knoll near the river on what is known as the Strickler Farm, located about three-quarters of a mile up river from Creswell Railroad Station (pl. 14). It had been reported by Mr. Gerald Fenstermaker of Lancaster that burials could be found near a barn on this property. Testing revealed the fact that the knoll did contain burials, and a permanent bench mark was established by drilling a 3 inch hole in the outcrop rock, south of the old tobacco shed on the high bank of a small stream. The south stake was located 60° E. (magnetic) 17 ft. 4 in. from the bench mark. From this stake a north and south line 100 feet long was carried across the field. The site was staked out in 10 ft. squares and all locations were triangulated from both north and south stakes (pl. 15). Chart 2.

The first ten burials found on the site caused confusion in the field notes as it was believed that they had been thoroughly looted by relic hunters. Observations made later, however, proved that this apparently disturbed condition was partially caused by the mortuary customs of the Susquehannock Indians.

FIELD RECORD

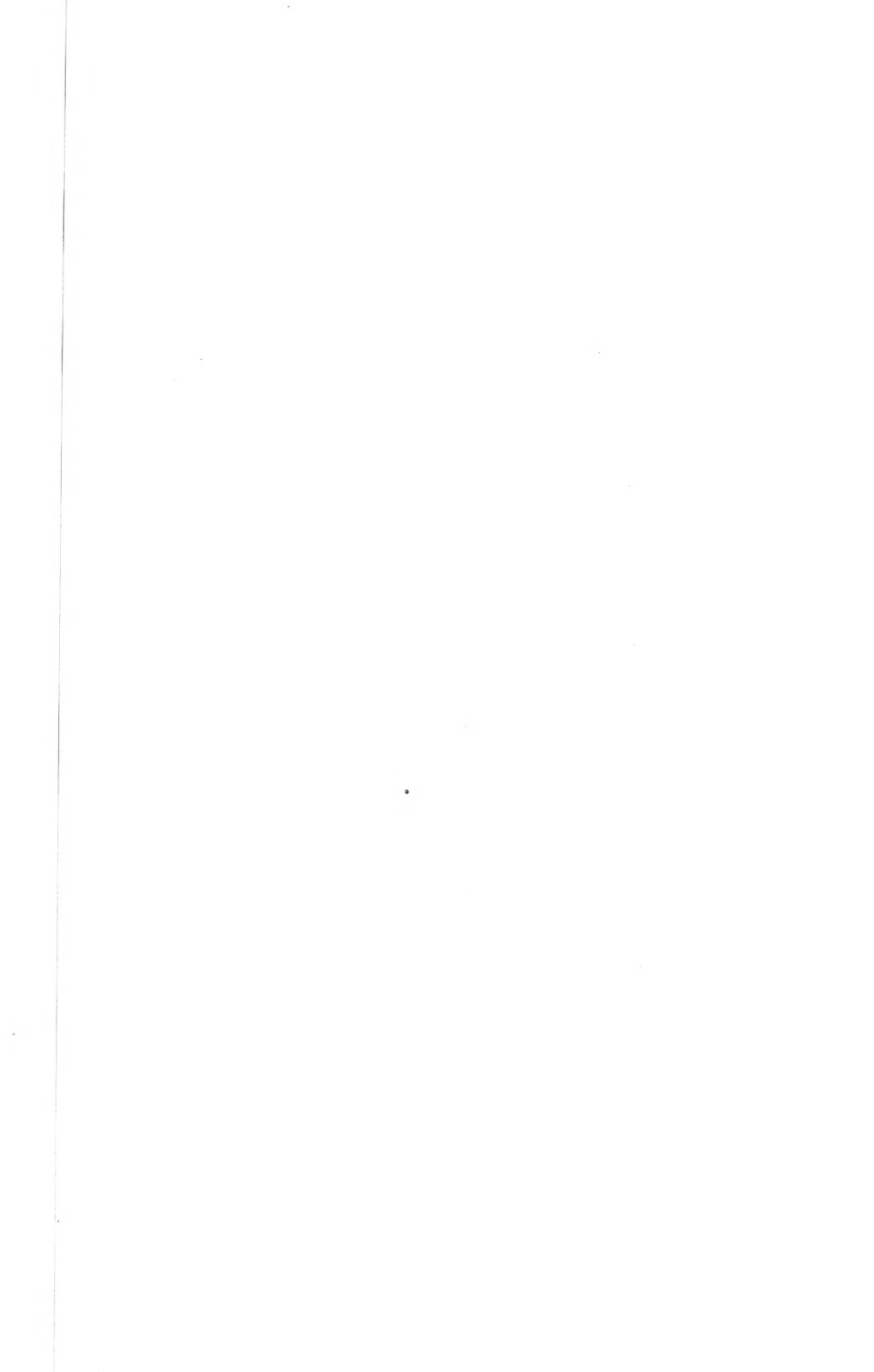
A 100 foot trench was started on the southeast side of the knoll. The first discovery in situ, however, was made by testing on the southwest side, and this point is marked Location 1 in Square 37 on the chart. It was the bottom of a brass kettle underneath which rested several perfectly preserved pumpkin seeds. Other objects associated with this kettle had been dragged to the surface and destroyed by soil cultivation.

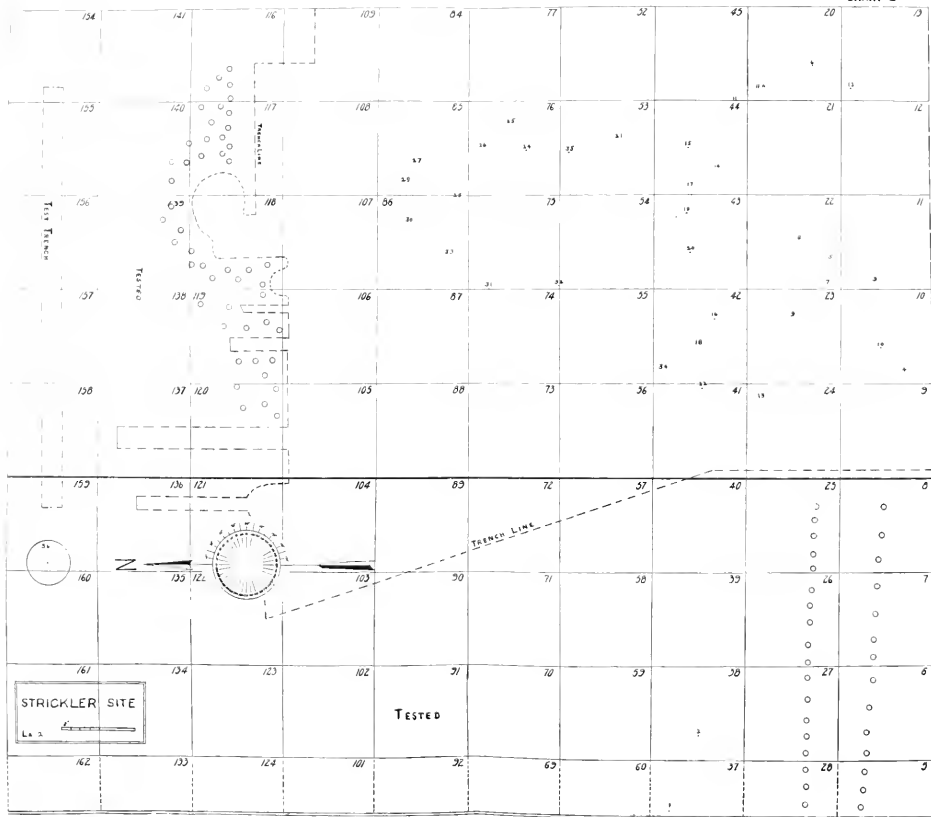
Directly east of Location 1 and in Square 38 a fragment of a human skull was found. The only objects associated with this fragment were an iron knife and a small brass kettle, underneath which a piece of skin with short fine hair, together with two fragmentary bits of woven trade cloth, were preserved.

The working trench was carried toward the north and Location 3 in Square 11 was made to a brass kettle near the remains of an old farm horse. In digging the grave of the horse, at least two burials were destroyed. The kettle was recorded at a depth of 30 inches and no artifacts accompanied it.

Location 4 in Square 10 was to a human humerus. The bones of this burial were badly disintegrated and all articular surfaces destroyed. On the top of a fragmentary piece of the right tibia a small brass kettle was found underneath which a small piece of a wooden bowl had been preserved. The broken and weathered condition of the human remains in this burial indicated a previous disturbance or a secondary handling of the bones.

Location 5 in Square 22 was apparently a storage pit as no evidence of human remains were found. It was recorded on the outer edge of the knoll and within a few feet of the buried horse. The triangulation was made to the center of the disturbed area which was 2 ft. 10 in. deep and 4 ft. wide. On the hardpan, in the northwestern part of the pit, a Bellarmine stoneware wine jug in perfect condition was found. Within 8 inches and east of the jug were a number of animal teeth, and on the northeastern side of the pit, also on the hardpan,





was a plain terra cotta smoking pipe, a bullet mould, a black twisted glass bead 5 inches long, and a pair of scissors. In the center of the disturbance and lying upon the bottom several bracelets made of iron wire were discovered, and near the eastern edge, in order, were two iron axes, a jew's-harp, an iron knife blade, a small pendant made of lignite, a pottery vessel, a lump of red ochre, white clay and glass seed beads.

Location 6 in Square 20 was to a fragment of a human tibia in the central part of an unusually large disturbance, or possibly two, running into each other. The larger one was unquestionably a badly disintegrated bundle burial, and it is possible that it had been partially looted. The smaller disturbance entering into the burial from the northwest may have been dug for the purpose of holding an offering consisting of a medium sized pottery vessel, covered with red paint, together with a brass kettle and a very small pottery vessel. On the north-east side of the grave, 16 in. from the human bone fragments and on the same level, two small pottery vessels were nested. Directly west on the extreme edge of the disturbance a small cup shaped pottery vessel had been placed.

Location 7 in Square 22 was to a fragmentary human skull on the hardpan, facing east, at a depth of 2 ft. 8 in. In the center of the grave one humerus and two tibias, badly disintegrated and without articular surfaces, were found. Scattered through the disturbed soil above the human remains were a number of small glass beads. Between the fragmentary skull and the long bones, resting upon the hardpan, was an iron hoe. Directly east from the skull, 2 ft. 6 in., a terra cotta pipe bowl rested underneath a large brass kettle containing a variety of seeds. Southeast of the long bones a number of shell beads were scattered on the same level. East of the skull, 5 ft. 8 in., and on the edge of the grave two small pottery vessels were recovered. At the side of the vessels was a small brass kettle containing three black walnut shells, two bear teeth and a quartz crystal. Northeast of the skull 5 ft. the blade of an iron axe was recorded.

Location 8 in Square 22 was a small pit 3 ft. long, 1 ft. wide and 18 in. deep. In the eastern end, resting upon the hardpan, were two small pottery vessels, and scattered through the western end from the surface to the bottom a number of glass beads.

Location 9 in Square 23 was to a fragmentary piece of human skull in the northeast end of the grave, 2 ft. 10 in. below the surface and resting upon the hardpan. In the southeast end, on the same level with the skull, several fragmentary pieces of human humerus and tibia bones were found. Associated with them was a medium sized pottery vessel, typically Iroquoian. Southeast of the skull bones 3 ft. was a small brass kettle containing preserved seeds and fish bones. At 110° 2 ft. a snuff box made of brass was found over which a number of small glass beads had been scattered.

Location 10 in Square 10 was to a fragmentary human skull in a typical bundle burial containing long bones. Mingled with the latter and on the eastern side of the grave were two lots of iron wire bracelets inside of which were fragmentary pieces of the distal ends of radius bones. North of the burial, 13 in., and on the same level was a green glass square face rum bottle and a large piece of white clay, over which had been scattered a number of small glass beads. Entering the grave on the south was a small disturbance 1 ft. wide and 3 ft. long. The extreme southern end of this disturbance contained one small pottery vessel, and near the point where it entered the grave, an iron axe and a brass kettle rested. Lying in order about the kettle was a small iron cup, a trigger guard for a flint-lock rifle, two fragmentary flint-locks, a brass guide for a ramrod and three pieces of a wooden gun stock. Glass beads were scattered throughout the earth from the surface to the floor.

Location 11 in Squares 44, 34 and 20 was to a pottery vessel at a depth of 2 ft. 8 in. resting against the northwest wall on the hardpan. Against the southeast wall on the same level as the pot was a brass kettle. This was an indeterminate disturbance and may have been a storage or offering pit.

Location 12 in Square 13 was to a fragmentary skull at a depth of 2 ft. 8 in. It was a bundle burial and two pottery vessels were found on each side of the badly disintegrated long bones.

Location 13 in Square 24 was to a fragmentary skull, at a depth of 1 ft. 9 in. In the northeast part of the disturbance 12 in. below the surface a fragmentary pottery vessel was recorded. On the same level and 13 in. west of the broken vessel was a small cup-shaped pot. Glass beads were scattered

through the grave, and one iron knife blade rested upon the hardpan on the southwest side. This disturbance was unusually small measuring 3 ft. by 4 ft. in diameter, and the fact that it contained fragmentary human bones suggested secondary handling of remains, possibly from a platform.

Location 14 in Square 44 was to a fragmentary skull at a depth of 1 ft. 10 in. Broken long bones had been placed about the skull which rested upon the hardpan. Directly north of the remains 11 in. was a long metal object, possibly a chisel. At 20° 14 in. an iron axe was recovered, along side of which was an iron knife blade. At 450° 8 in. was a fragmentary terra cotta pipe bowl and two iron discs.

Location 15 in Square 44 was to an unusually large smoking pipe with an owl effigy on the bowl found at a depth of 2 ft. 8 in. This disturbance was 7½ ft. long by 5½ ft. wide and it may have been associated with Burial 14, as no human remains were found. At 340° 6 in. from the pipe a very small pottery vessel rested upon the same level. At 270° 3 ft. 6 in. and 2 ft. 8 in. deep a large decorated pottery vessel of what is generally known as Iroquois collar type was found. On the same angle and level 4 ft. was a small cup shaped vessel.

Location 16 in Square 42 was to the center of a small storage pit which contained, at a depth of 7 inches, one fragmentary pottery vessel.

Location 17 in Square 44 was also to the center of a pit. This disturbance averaged 2 ft. by 3 ft. in diameter and was 1 ft. 7 in. deep. Scattered from the surface to the bottom were several tubular glass beads, and all the fragments of one small pottery vessel. Upon the hardpan, in the southeast end, was a worked porcelain disc together with a large striped bead.

Location 18 in Square 42 was to the center of a pit 3 ft. by 2 ft. and 1 ft. deep. On the bottom it contained a small brass box underneath which a fragment of a trade blanket was preserved by the copper verdigris.

Location 19 in Square 43 was to the center of a pit 3 ft. by 2 ft. and 2 ft. 10 in. deep. In the southeast corner upon the hardpan was a large, broken, pottery vessel, under which two smaller ones were nested together with five brass thimbles, two hawk-bells and a number of trade beads.

Location 20 in Square 43 was to a fragmentary skull 2 feet deep at the northwest end of the grave. At the extreme south-

west end on location level were the fragments of a human patella and metatarsus bones. Associated with the latter were fifty-six perforated elk teeth. At 300° 6 in. was a broken pottery vessel. Directly north 11 inches was a fragment of an iron knife and a small pottery vessel with part of the rim missing. At 140° 20 in. was a fragmentary pottery vessel together with large lumps of red paint and several iron wire bracelets. At 180° 2 ft. 6 in. was an inverted brass snuff box and at the same angle 11 inches a small inverted brass kettle.

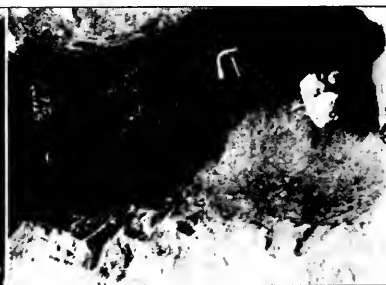
STRICKLER SITE

PLATE 16

PLATE 17



BURIAL 22. SHOWING IRON ARMOR, LONG RIFLE BARREL BENT TO CONFORM WITH THE DISTURBANCE AND OTHER OBJECTS IN PLACE



BURIAL 26. SHOWING THE FRAGMENTARY CONDITION OF THE HUMAN REMAINS

Location 21 in Square 53 was to a fragmentary skull at a depth of 3 ft. 5 in. At 100° 2 ft. 4 in. was a large brass kettle containing a smaller kettle in which a number of walnut shells and seeds were recorded. At 140° 6 ft. on the skull level were a number of strip beads made of fragments of brass.

Location 22 in Squares 41 and 42 (pl. 16) was to a fragmentary piece of skull at a depth of 2 ft. 9 in. found underneath some iron mail, probably a breast plate. At 130° 2 ft. several pieces of radius bones were preserved by brass bracelets. At 90° 1 ft. 2 in. was a green glass rum bottle, on the top of which rested a brass kettle, a sword blade, and a long rifle barrel bent to conform with the disturbance to 140° 6 ft., at which point a broken pottery vessel, a pair of scissors, a brass snuff box, a small pottery vessel and an iron axe were recorded. At 80° 2 ft. was another rum bottle made of black glass. At 230° 8 in. was a small metal snuff box.

All objects recovered with the exception of the rifle were on the skull level and resting upon the hardpan. Glass beads

were scattered throughout the earth and the fact that they were especially thick near the sides and upon the hardpan may indicate the grave had been lined with cloth or skin upon which these beads were sewn.

Location 23 in Square 54. This burial as excavated by a local enthusiast and contents and depth of the objects in the

STRICKLER SITE

PLATES (UPPER) 20, 21, (LOWER) 18, 19



TYPICAL BURIALS ON THE STRICKLER SITE
Plates 18 and 19 show the first offering pits recorded

earth were not obtained. The disturbance contained one rifle barrel, one small brass kettle, one cap box, two gun flints, twelve lead bullets, a bullet mold and a long metal pipe with an effigy on the bowl.

Location 24 in Square 76 was to human teeth found at a depth of 2 ft. 6 in. in an unusually small disturbance measuring 2 ft. 10 in. by 1 ft. 7 in. The teeth were scattered around a small pottery vessel on the western side.

Location 25 in Square 76 was to a small pit measuring 1 ft. 10 in. by 2 ft., containing white quartz chips, fragments of charred wood and indeterminate calcined bones. These objects were in the bottom of the pit at a depth of 3 ft.

Location 26 (pl. 17) in Square 76 was to a fragment of a human skull at a depth of 3 ft. At 135° 2 ft. were fragmentary pieces of human fibula and tibia bones. At 320° 7 in. and resting upon the hardpan was the trigger guard of a rifle. On the same level 140° 1 ft. 2 in. a typical Iroquoian terra cotta pipe with a broken stem was found. At 92° 2 ft. 7 in. were two indeterminate pieces of iron, a pipe stem or bead made of lead, five lead rifle balls, two gun flints and one stone drill. Resting against the wall at 92° was an iron knife.

Location 27 (pl. 18) in Square 85 was to a skull fragment in the extreme northwest end of a well-marked disturbance at a depth of 2 ft. 6 in. Two pieces of human fibula and a femur rested on the hardpan at 120° 4 ft. No artifacts were found with these remains but in a connecting pit at the extreme southeast end measuring 1 ft. 6 in. by 1 ft. 8 in. and 3 ft. deep, a lump of red ochre and three large paint stones were recovered. This was a looted burial, and the connecting disturbance may have been an offering pit.

Location 28 (pl. 19) in Square 85 and 86 was to a skull fragment in the extreme northwest corner at a depth of 2 ft. 11 in. Leaning against the southwest wall at 150° 1 ft. 8 in. were two human tibia bones and one fibula bone. At 65° 9 in. upon the hardpan was a shell gorget and a quantity of red ochre. An offering pit 1 ft. 7 in. long by 1 ft. 2 in. wide and $2\frac{1}{2}$ ft. deep intercepted this burial on the southern wall. Triangulating from the skull and at 170° 3 ft. 1 in. were fragmentary bits of a large pottery vessel under which rested five long black tubular beads with white stripes.

The human bones placed against the wall near the inter-

cepting pit may have had some significance. This was the third verification of a new Iroquois mortuary custom of digging an offering pit in connection with the main burial.

Location 29 in Square 88 was to a large pottery vessel in the bottom of a pit measuring 3 ft. by 2 ft. and $3\frac{1}{2}$ ft. deep. At 330° 9 in. and on location level was a small pottery vessel beside which were two iron and two copper dangles.

Location 30 (pl. 20) in Square 86 was to an isolated skull 3 ft. 4 in. deep in the northwestern part of a grave, measuring 5 ft. by 3 ft. 3 in. At 140° 2 ft. fragmentary pieces of long bones were found upon location level. Directly above the skull and at a depth of 1 ft. 3 in. was a perfect brass kettle with a loop handle. At 143° 1 ft. and also on location level was a broken terra cotta pipe, below which a number of small quartz crystals and mica flakes were found. At 125° 2 ft. was a mass of rusted iron and broken stone.

Location 31 (pl. 21) in Square 75 was to a fragmentary skull 2 ft. 10 in. deep in the northwest end of a grave, measuring 4 ft. 9 in. by 2 ft. 2 in. Directly on the top of the skull a terra cotta pipe, a triangular arrowpoint and an indeterminate piece of iron were found. At 145° 2 ft. 8 in. several human

STRICKLER SITE

PLATE 22



LOCATION 32. SHOWING A DOUBLE BURIAL WITH PIPES, POTTERY VESSELS, HUMAN REMAINS AND OTHER OBJECTS IN PLACE

long bones were found leaning against the wall. At 145° 2 ft. 5 in. was a large iron axe.

Location 32 (pl. 22) in Square 75 was a double burial. Triangulations were made to fragmentary skull (A) 1 ft. 6 in. deep in the south central part of the disturbance. The second broken skull (B) rested upon the hardpan at 340° 1 ft. 3 in. At 180° 1 ft. on location level were tibia and fibula bones which apparently belonged to skull (A). At 320° 1 ft. 4 in. were tibia and femur bones apparently from skull (B). At 280° 1 ft. 9 in. was a small brass kettle. At 240° 1 ft. 7 in. an indeterminate iron rod leaned against the wall. At 220° 10 in. a terra cotta pipe with two running deer etched upon the sides was recorded. At 100° 24 in. was another terra cotta pipe with a bowl modeled to represent a wolf. At 210° 1 ft. 6 in. were four gun flints and a small pottery vessel.

At 320° 4 ft. an offering pit 3 ft. in diameter intercepted the main disturbance on location level. Upon the hardpan at the bottom of this pit was a polishing stone, a perforated stone pendant, a medium sized pottery vessel, flint chips and a terra cotta smoking pipe. Scattered throughout the entire disturbance were fragmentary pieces of iron.

Location 33 in Square 86 was to a broken skull at a depth of 1 ft. 8 in. in the north end of the disturbance, which was 2 ft. 2 in. wide and 5 ft. 8 in. long. At 140° 2 ft. 8 in. on location level were some disintegrated long bones leaning against the wall. At 130° 1 ft. 2 in. was a terra cotta pipe, at 120° 1 ft. a round metal snuff box, at 140° 1 ft. 5 in. an iron axe, at 130° 1 ft. 8 in. a small inverted brass kettle, 140° 3 ft. 4 in. a large brass kettle, at 30° 3 in. a long rifle barrel, 240° 3 in. a long rifle barrel with trigger guard and flint lock, 130° 2 ft. 2 in. red ochre and flint chips, 140° 3 ft. 10 in. a fragment of wooden rifle butt and red, white and blue glass beads.

This was a scattered bundle burial, and bone measurements were impossible. All the objects recorded with the exception of the rifle barrels were found upon the hardpan. The large brass kettle contained fish bones, animal bones and seeds. An intrusive flint spear head was found above the remains in the general digging.

Location 34 in Square 42 and 55 was to a fragmentary skull facing east at a depth of 18 in. in the north end of the grave. The following objects were recorded on location level: 55°

14 in. fragmentary pieces of bark, 90° 4 ft. a coin dated 1621, 120° 3 ft. a perforated elk tooth and at the same angle 4 ft. two iron knives, 110° from 1 ft. to 3 ft. scattered glass beads and a jew's harp, 140° 2 ft. a fragment of cloth, 180° 2 ft. 6 in. a small piece of buckskin and at the same angle 4 ft. a jews-harp, 200° 3 ft. 6 in. two iron nails, 315° 1 ft. 6 in. one iron nail. Brass bands, possibly bracelets, were found over the top of the skull and beside them was a brass spoon containing fragments of a bone spoon and two seeds.

Location 35 in Square 53 and 76 was to the central part of a distance which was 3 ft. 6 in. deep and 4 ft. 6 in. wide. At 180° near the wall were small fragments of bone, possibly human. At 20° 2 ft. was a brass bracelet between 120° and 165° 2 ft. 3 in. was an iron receptacle, a thimble, a looking glass, a terra cotta smoking pipe and four human teeth. Scattered over these objects were numerous glass beads. At 230° resting against the edge of the pit was a large brass kettle containing a pottery vessel. At 310° resting against the wall was a terra cotta smoking pipe.

The beads in the extreme southwest end of the pit were from a belt or girdle. The iron receptacle contained a long twisted green glass bead and nearby was a mass of potter's clay and glazed white crockery. Scattered throughout the pit were ten pieces of galena. The brass kettle was lying upon bark, and the pottery vessel inside of it contained remnants of food. Between the brass and the pottery vessel were remnants of a bark or wooden receptacle. Intermixed with the soil in various places throughout the grave were pieces of yellow limonite.

Location 36 in Squares 159 and 160 was to the center of a disturbance 2 ft. 7 in. deep and 5 ft. 6 in. in diameter. This was an unusually large isolated pit recorded on the extreme northwestern side of the site. It was perfectly round and scattered throughout the soil were fragmentary pieces of chipped white quartz and animal bones.

BONE AND ANTLER OBJECTS

The Strickler Site did not produce a complete artifact made of bone or antler. At one time it may have contained objects of this material, but chemicals used in fertilizer and in the earth seemed to have been particularly active upon bone. This

action was quite noticeable on the fragmentary human remains observed in the excavations.

TEETH—The two canine teeth of a black bear, recorded in a white man's kettle with Burial 7, were preserved by chemicals from the brass. A total of 118 elk teeth, perforated for suspension on the proximal ends, were recovered (pl. 23).

STRICKLER SITE

PLATE 23



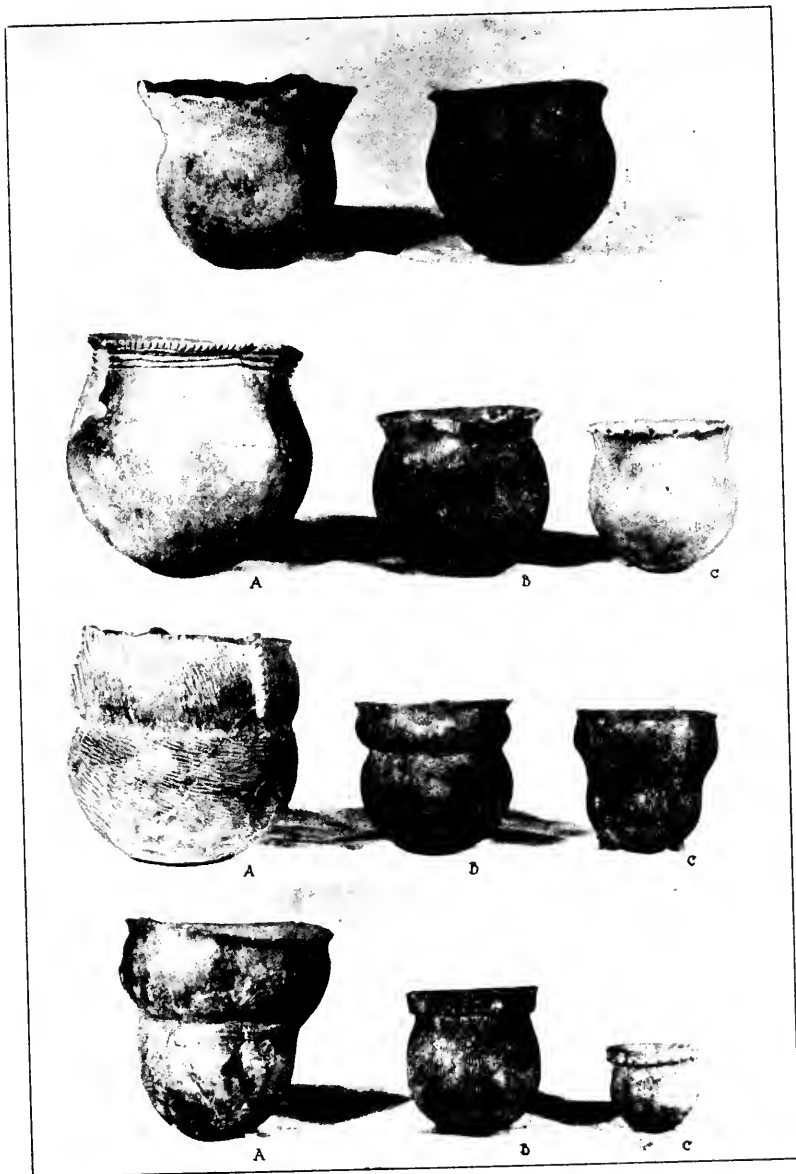
ELK TEETH PERFORATED FOR SUSPENSION

Fifty-six were with Burial 20 and had formed a necklace at one time.

POTTERY—The pottery on this site was in excellent condition and thirty-two complete vessels were recovered. The ware was dark brown and yellow with a reddish tinge, the natural tints of fired clay without artificial coloring. The smooth inner surfaces of most of the vessels retained the black water-proofing placed there by their Indian owners, probably by burning crushed corncobs inside shortly after firing. The clay was shell and sand tempered and contained minute specks of mica. The surface of the ware was pitted but in texture fine and inclined to scale upon exposure. In thickness it varied from one-eighth to one-quarter of an inch with an average of one-quarter. With the exception of two smoothly finished vessels, all showed that they had been combed before baking, probably with a cord

STRICKLER SITE

PLATES (DOWN) 24. 25. 26. 27



POTTERY VESSELS FROM THE STRICKLER SITE

(Heights: Plate 24, left $5\frac{1}{2}$ in. Plate 25, A— $6\frac{3}{4}$ in. Plate 26, A— $7\frac{3}{4}$ in.
 Plate 27, A— $7\frac{1}{2}$ in.)

wrapped stick or a corncob. The depth and precision of the incised lines on some of the vessels indicated that an implement similar to the bone combs found on nearby sites, with a similar Iroquoian horizon, were used in finishing the surface of some vessels.

FORM CLASSIFICATION—Six pot forms were represented on this site. All vessels were round bottomed, and the largest would not hold more than two quarts.

The predominating form was typically Iroquoian with upper projections on an overhanging rim. Some of the projections were notched, others rounded and plain; many vessels had two and some four. The constricted necks and flaring rims had no decoration. The smallest vessel in this group would hold about one-half pint and the largest, about three pints (pl. 24).

The second form was globular, with a plain rim and punctate decoration evenly spaced below the lip. The flare was not so prominent as in type one, and one of the larger vessels had three incised lines encircling it just below the rim (pl. 25).

The third was a semi-globular form with a wide bulging collar forming the neck and rim. This form had several variants; some of the collars were cylindrical (pl. 26, B) others had small overhanging rims (pl. 26, B). One especially fine vessel had four perpendicular notched ridges evenly spaced around its collar for decoration (pl. 26, A). This type of collar was unusual and noted only on the Strickler and Schultz sites. Dr. Arthur Parker claims it is an archaic Iroquoian type in the New York area.

The fourth form was semi-globular and had a narrow, flat collar with punctate design evenly spaced on its lower edge (pl. 27, figs. B, C).

The fifth form had a heavy flaring rim with an incised collar encircling its lower edge together with a noded ridge. The rims were decorated with two triangular conventional human faces, and the ware was lighter than average. This form was probably a survival from a more archaic type (pl. 28, fig. A).

The sixth form was similar to the fifth with the nodes below the collar missing. The conventional human face was not present; the collar had a decided flare and the ware was delicate (pl. 28, figs. B, C).

Three small bowls were recovered from this site; two were

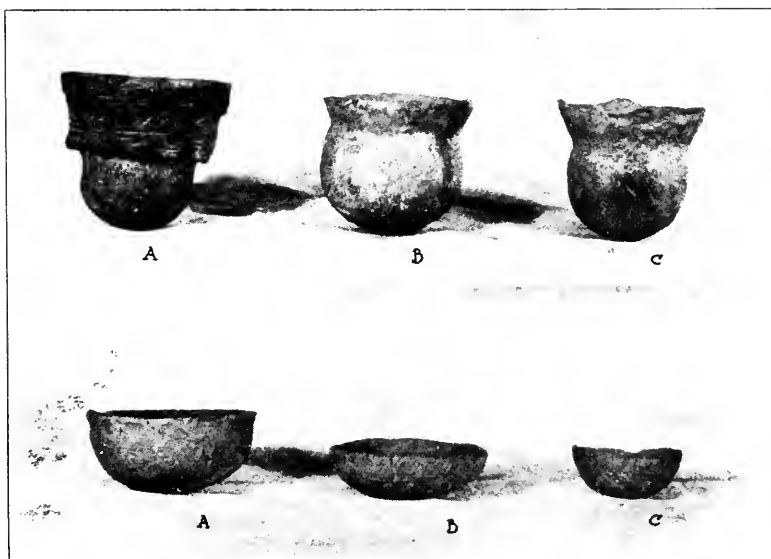
plain (pl. 29, A, C) and the other had three incised lines encircling the outside of the rim (pl. 29, B).

USE—The pottery recovered from the Strickler Site was undoubtedly used for cooking and other utilitarian purposes. The small bowls and vessels were probably for serving food and water.

PIPES—The earthenware smoking pipe from this site showed a wide range of forms. The common variety, of which thirteen

STRICKLER SITE

PLATES (DOWN) 28, 29



SMALL POTTERY VESSELS AND BOWLS

(Heights: Plate 28, A— $4\frac{3}{4}$ in. Plate 29, A— $2\frac{1}{4}$ in.)

were recovered, was a slender, graceful type made of terra cotta. Contrary to most pipes of this sort, found on Iroquoian sites, these had plain cylindrical bowls, the average angle of which was about 90° . Figures A to F (pl. 30), were excellent examples of perfect pipes of this type with stems approximately 6 inches long and nicely rounded. In Figures G and H the proximal ends of the stems had been broken and a new mouth-piece carved out.

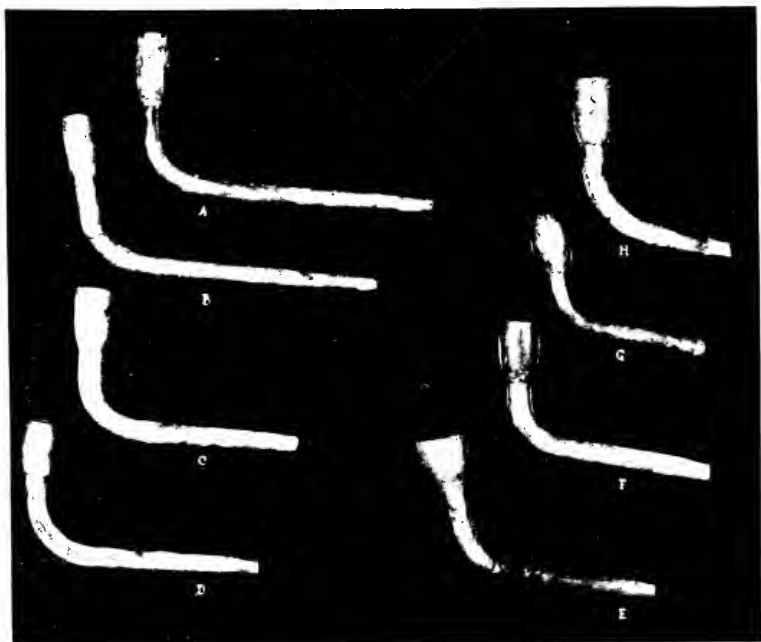
An unusually large effigy pipe was found on Location 15 (pl. 31, fig. B). It was 11 inches long and made of fine clay, fired to a dark yellowish red. The bowl represented an owl facing

toward the user and encircling the top were shallow, uneven, round, punctate decorations. The orifice for tobacco was in the center of the back of the owl. This specimen might be called a verification of Captain John Smith's observations on the Susquehannock Indians. He claimed they carried pipes large enough to be used as weapons.

Figure D (pl. 31), is an excellent example of the so-called "coronet" pipe with an unusually wide rim. The polished

STRICKLER SITE

PLATE 30



SMOKING PIPES MADE OF TERRA COTTA—THIRTEEN OF THIS TYPE WERE RECOVERED FROM THE SITE

earthenware was dark and poorly tempered. The stem was 4 inches long with a bulge at the proximal end of the mouth-piece. The decoration on the bowl had punctate horizontal, obtuse and acute indented lines. The pipe was a type usually associated with the Seneca region of New York. The bulge at the mouthpiece on the stem is unusual for this region but common to the south especially among the Cherokee.

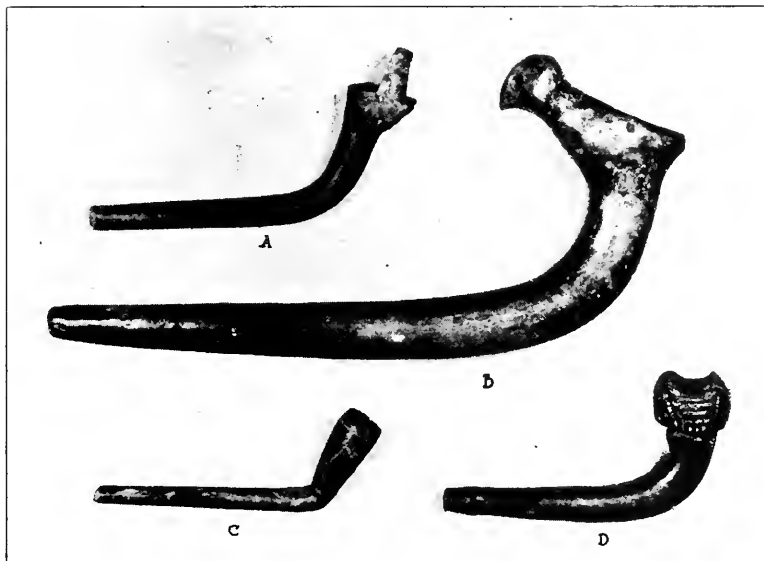
Figure A (pl. 31), was a very unusual pipe. The bowl represented either a wolf or a dog facing up on an angle of

about 40°. The ears and head of the animal were modeled in relief and the nose and upper jaw formed part of the bowl. The stem was 4½ in. long and perfectly round. The ware was dark in color and well baked.

One of the finest examples of the Iroquoian pipe maker's art is represented in (pl. 31, fig. C). This graceful earthenware pipe was 4 in. long with a tapering bowl upon which two figures of a running deer were etched. The ware was

STRICKLER SITE

PLATE 31



SMOKING PIPES OF EARTHENWARE, REPRESENTING EFFIGY AND ETCHED FORMS

thin, dark, smooth and polished, and the etching had been done with delicate precision. A shallow incised line encircled the bowl near the rim. Decorated smoking pipes of this type are almost unknown from Iroquoian sites. As a general rule forms are modeled in relief as bowl embellishments and incising is used for straight line design.

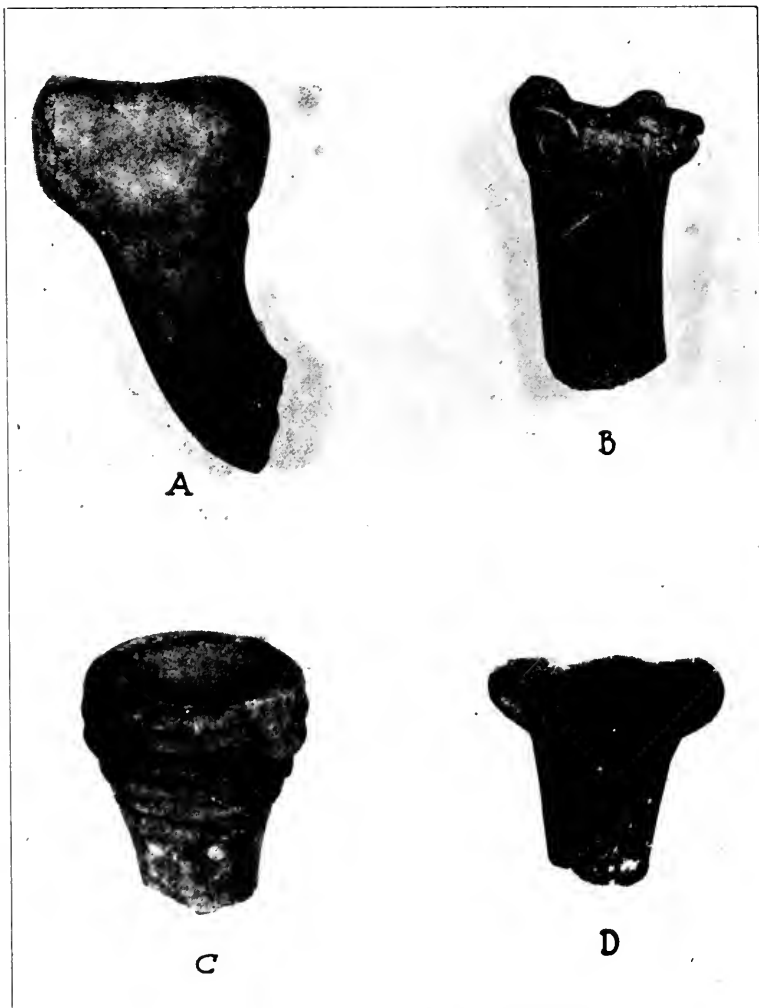
Several fragmentary pieces of pipes were recorded. The bowl of an unusually large one had deep incised lines running around it about halfway down the side, and shallow, round, punctate decorations evenly spaced just below the rim (pl. 32, fig. C). Stems and fragments of the plain common terra

cotta types were plentiful and almost every complete pipe was found associated with human remains.

A trade pipe 2 ft. long and of the "church warden" type was recovered on Location 23. The soft metal out of which the pipe was made had disintegrated and the effigy on the outside of the bowl could not be determined.

STRICKLER SITE

PLATE 32



FRAGMENTARY PIECES OF EARTHENWARE PIPES
Fig. B has two human faces and two animal heads on the rim of the bowl

This late historic Susquehannock site contained the finest examples of pipes recovered by the expedition. Apparently the art of fashioning stone pipes had been lost or was not being practiced at the time of occupation. All the pipes recovered were earthenware and monolithic. The forms show northern Iroquois influence and the effigy types may indicate Huron or Seneca contact.

STONE OBJECTS—Very few stone objects survived to the period of this site. A perforated celt-shaped pendant in the offering pit of Location 32 was a crude affair, and lacked the polish and workmanship of more archaic Iroquoian stonework. The suspension hole was cone-shaped and deep scratches

STRICKLER SITE

PLATE 33



BEADS MADE OF SHELL

on the sides indicated that it probably served as a hone as well as a pendant. A small triangular piece of worked lignite was recorded—it was grooved at the small end and used as a pendant. Five small flat stones partially worked and polished were probably used as pottery smoothers.

An interesting unfinished winged bannerstone was found on the surface of the site and was unquestionably intrusive. A single grooved stone axe, also recorded near the surface of the ground in the general digging, belonged to an earlier period and can be classed with the bannerstone.

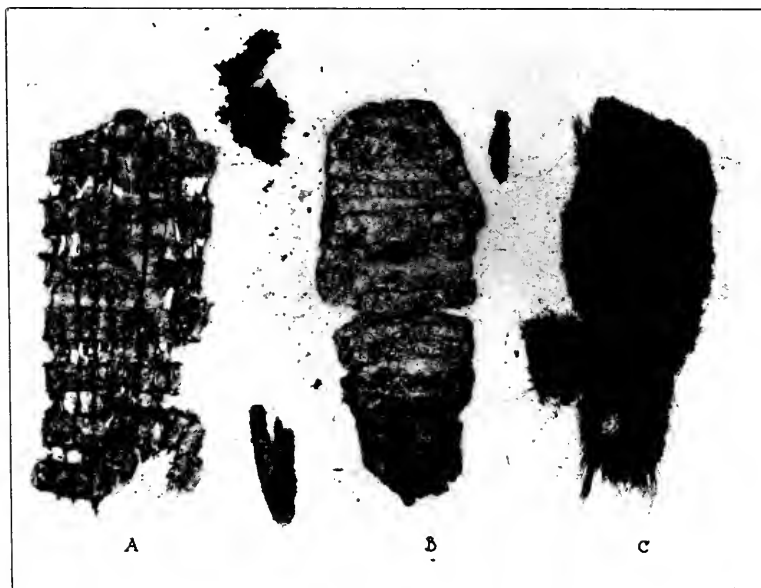
One arrowpoint was recovered in situ. It was a triangular shaped piece of chipped flint with Burial 32, and a type usually classed as early Iroquoian. A stemmed spear or knife blade was found in Squire 86, and was a form generally found on sites with an Algonkian horizon. Gun flints of several varieties of hard stone were scattered throughout the digging. Many of them were in place on rifle parts found in the graves.

As a whole there was not enough character to the stone artifacts recovered on this site to assign them to any definite cultural period. The intrusive objects were similar to those found scattered on the surrounding fields in this long occupied area.

SHELL ARTICLES—The most interesting of all the shell artifacts on the site were the beads (pl. 33). The long tubular types with Burial 7 were made of conch shells, and were associated with eight graduated white discoidals which formed part of a necklace. Several lots of blue and white wampum type beads in a variety of sizes were parts of belts that sur-

STRICKLER SITE

PLATE 34



OBJECTS PRESERVED BY VERDIGRIS

Figure A, represents part of a wampum belt, preserved by chemicals soon after it was found in the earth; B, a section of reed matting; and C, a fragment of bearskin

vived the powerful chemical action in the soil. Many disintegrated before preservatives could be applied (pl. 34, fig. A).

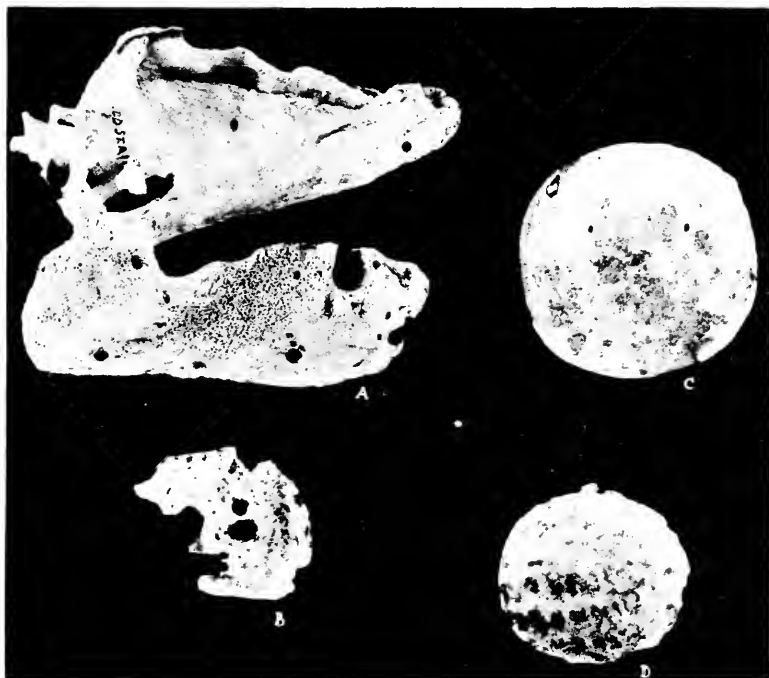
An unusually fine gorget made out of a flat portion of a conch shell was recovered almost intact. A projecting edge had been drilled for suspension and evenly spaced dot decoration embellished the scalloped edge (pl. 35, fig. C). An oyster shell gorget in fragmentary condition was with Burial

28 and on its disintegrated smooth inner surface evidence of an elaborate dot decoration was noted (fig. B).

Innumerable fresh water shells were scattered over the site. Many of these were probably utilized for various domestic purposes. A large, fragmentary conch shell showing where a round core had been taken from a heavy projecting edge indicated how raw material for bead making was secured (pl. 35, fig. A).

STRICKLER SITE

PLATE 35



SHELL OBJECTS

Figure A, represents a conch shell from which beads have been made. Figures B, C and D are ornaments made of shell

The long tubular bead was not unknown to northern Iroquois, its general use, however, was more southern. The gorgets made of conch shells were distinctly southern and several similar types have been found associated with Cherokee remains on the Upper Tennessee River by M. R. Harrington (19).

PAINTS—The Susquehannocks who lived on the Strickler site used paints extensively. This fact was verified by the

STRICKLER SITE

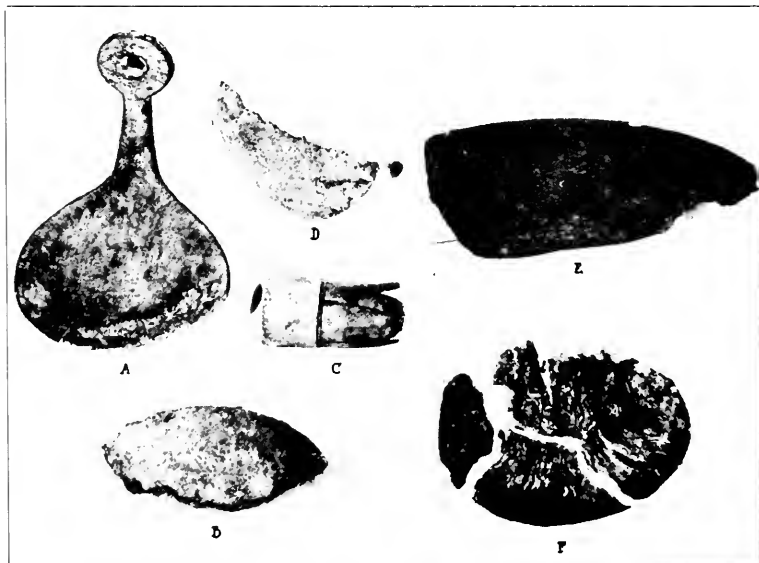
PLATE 36



WHITE CLAY AND RED OCHRE USED AS PAINT

STRICKLER SITE

PLATE 37



OBJECTS OF WOOD PRESERVED BY VERDIGRIS

variety of colors recovered. Large lumps of red ochre were plentiful in many of the graves together with several pieces of pure white clay (pl. 36). The latter mixed with soot formed a black pigment of which many pieces were found. The fact that white and black colors were the favorites for personal adornment is shown by early historic records in which the Susquehannocks were called the "Black and the White Minquas."

WOODEN OBJECTS—It is unusual to find objects made of wood preserved on an archaeological site, for as a general rule it disintegrates rapidly after being placed in the earth. All the wooden objects recovered on the Strickler Site were associated with trade brass, and the chemicals from this metal seeping into the wood acted as a preservative.*

A fragment of a bowl was found on Location 4 inside of a small brass kettle. The piece was large enough to determine that the wooden vessel had a diameter of $6\frac{1}{4}$ in. and was $2\frac{1}{2}$ in. deep. It had been made from a tree knot, and was $\frac{3}{8}$ of an inch thick on the bottom and tapered to a sharp edge on the sides (pl. 37, fig. B).

On Location 11 another brass kettle was found which contained a fragment of a small wooden bowl with a diameter of 4 in. and an average depth of $1\frac{7}{8}$ in. Thickness could not be determined exactly but the edge was similar to that on the fragment from Location 4. This bowl had apparently been wrapped in trade cloth as a few pieces stained green by the brass still adhered to the edges (pl. 37, fig. B). In the same kettle part of a finely wrought wooden spoon, 3 inches wide, was recovered. At a point $1\frac{1}{2}$ in. from the distal end this piece was a little over an eighth of an inch in thickness (fig. D).

A section of a rifle stock had been saved by the chemicals from the brass stop on the arm butt. Other fragments of the wooden parts of rifles were also preserved in a similar manner (fig. C).

TRADE ARTICLES—An abundance of early trade material was found on the Strickler Site. Outstanding in this group

* An analysis of two samples showed that the green chemical was verdigris (basic copper carbonate or copper subcarbonate $\text{—Cu CO}_3\text{Cu(OH)}_2$). Copper exposed to moist air containing carbon dioxide (CO_2) is acted upon in this way. One sample showed a slight trace of zinc which could be considered an impurity in the copper or may have been used as an alloy. Zinc was used in alloys similar to bronze in early times but were made by smelting copper ores which contained zinc.

STRICKLER SITE

PLATE 38

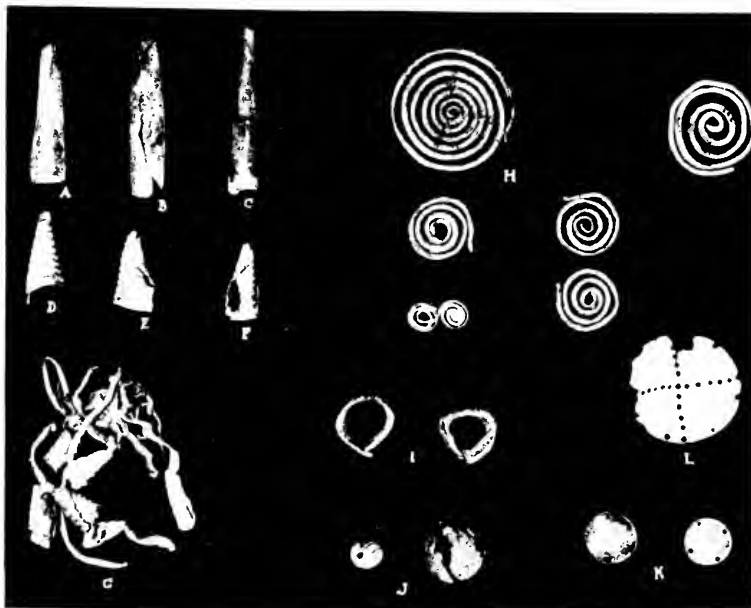


TRADE KETTLE MADE OF BRASS

These vessels were brought to the eastern Indians by early white traders

STRICKLER SITE

PLATE 39



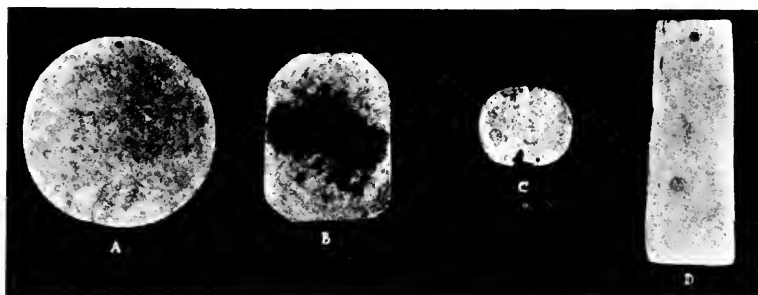
ARTICLES MADE OUT OF BRASS BY WHITE MEN AND THE INDIANS

were the brass trade kettles, ranging in size from 18 in. in diameter and 9½ in. deep to 5 in. in diameter and 2 in. deep. These vessels were brought to the eastern Indians by the very early traders. All the vessels, large and small, had a round iron hoop for a rim around which the brass was wrapped. Beneath the rim a half round iron handle was riveted (pl. 38). Many of the larger specimens showed evidence of crude attempts at repair work.

These brass kettles were important because they preserved definite Susquehannock mortuary customs of depositing food

STRICKLER SITE

PLATE 40



PENDANTS OF SHEET BRASS

Figure B has a fragment of deerskin attached

with the dead. They contained the bones of deer, fish and other undetermined food particles and seeds.

A number of articles were made by the Indians from sheet brass (pl. 39) such as rolled jinglers, tubular beads (figs. A-F), flat and rolled bracelets and spring shaped ear ornaments (pl. 39, fig. H, finger rings, fig. D, etc.).

Many pendants made of sheet brass perforated for suspension, together with miniature gorgets in imitation of the conch shell types, were found (pl. 40, fig. A-D). A complete necklace of brass ornaments is represented (fig. E).

Partially preserved by narrow strips of brass attached to its edges a fragment of a hide belt was recovered (pl. 41).

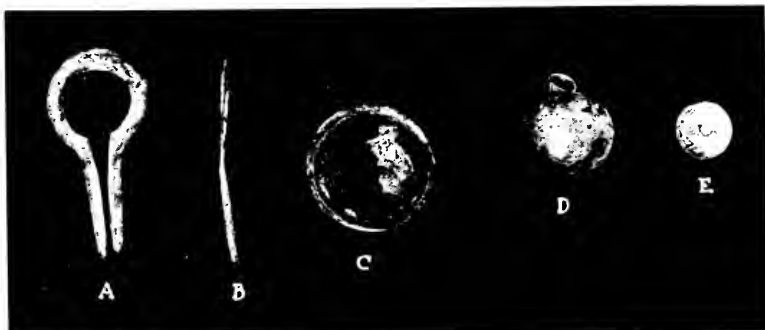
Trade objects of brass such as spoons (pl. 42, figs. B, C), hawk and open bells (pl. 43, figs. C, E), thimbles, jew's harps (fig. A), snuff box covers and cups were recorded (pl. 44, figs. A, B, D).

FABRIC AND MATTING—Several pieces of coarse trade cloth, probably blankets, had been preserved by brass in and near the larger kettles. Fragments of a black bear hide and a small section of reed matting were also noted (pl. 34, fig. B, C).

LEAD—A few flat pieces of lead and musket balls of varying sizes can be classed as trade material (pl. 45, fig. C). Only one small piece of native lead was found and that may have been used as a grey paint.

STRICKLER SITE

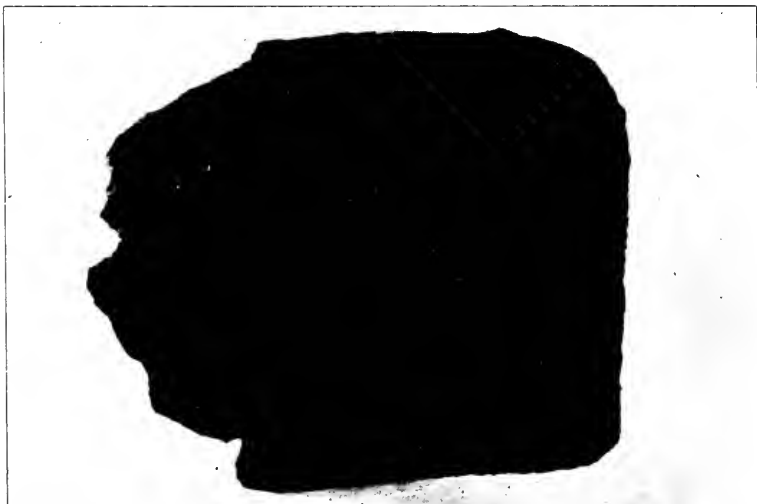
PLATE 43



A JEW'S-HARP, AN AWL AND HAWK BELLS MADE OF BRASS

STRICKLER SITE

PLATE 46



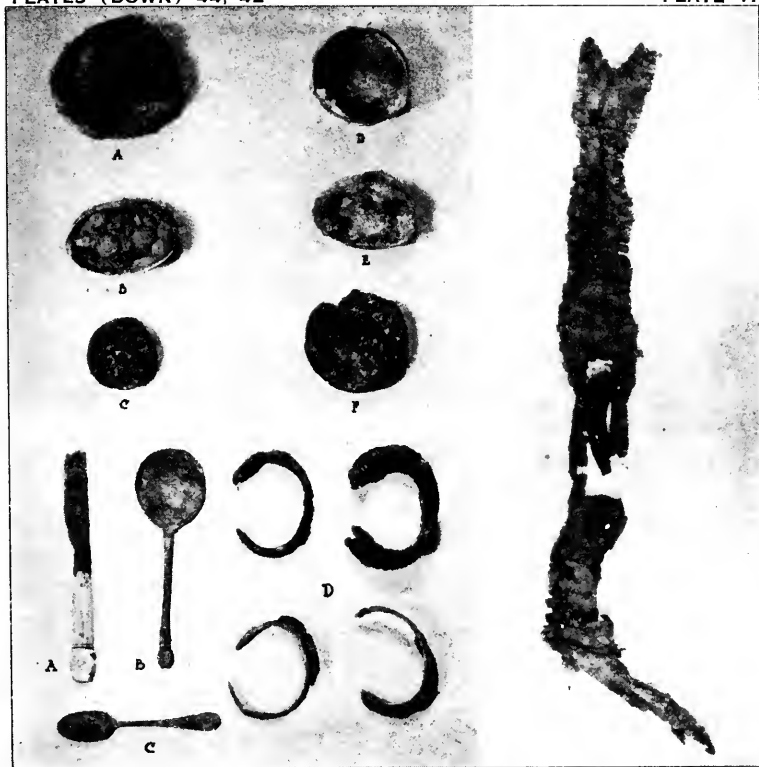
A SECTION OF ARMOR, PROBABLY A GORGET, FOUND ON TOP OF HUMAN BONES AT LOCATION 22

IRON—The most interesting object made of iron was a large piece of armor, probably a gorget (pl. 46). It was knobbed and ribbed, and its origin, like the swords found on the site is doubtful (pl. 47, fig. C).

Several pistols and rifle barrels recorded in the graves designated this site as late colonial. One long rifle barrel was bent

STRICKLER SITE
PLATES (DOWN) 44, 42

PLATE 41

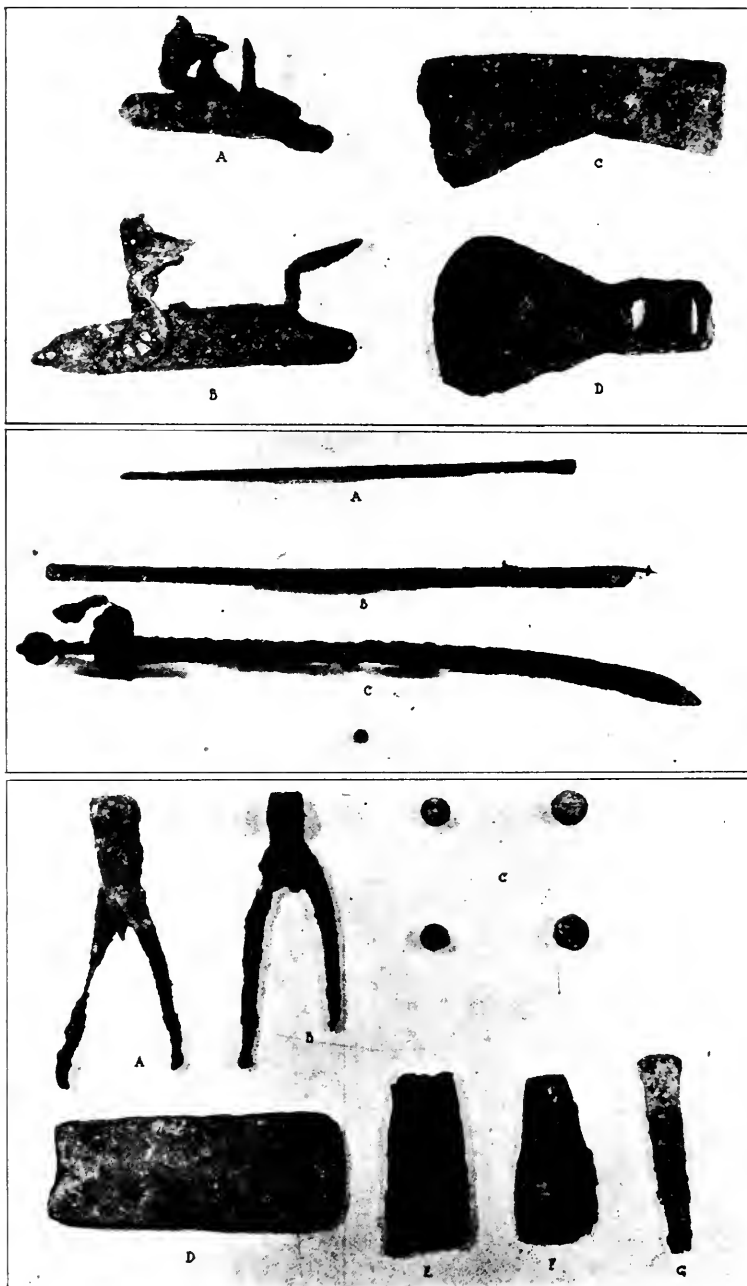


METAL SNUFF BOXES
KNIFE, SPOONS AND BRACELETS

A HIDE BELT PRESERVED BY
BRASS

to conform with the excavation into which it had been placed. A number of flint-locks, some of them with the flints in place, date the site definitely after 1625, the year this gun mechanism superseded the match-lock (pl. 48, fig. A, B).

Innumerable hatchets, hoes (pl. 45, figs. D, F), and several indeterminate celt-shaped pieces of iron (figs. E, G) show that the colonial blacksmiths played an important part in the trade



OBJECTS OF IRON

Plate 48. Figures A, B, represent flint-locks used with long rifles. Figure C, is a hatchet, and D, a hoe

Plate 47, Figure A, presents the blade of a rapier, B, a section of a long rifle and Figure C, a sword.

Plate 45, Figures A, B, represent bullet moulds, C, lead bullets and D, E, F, G, are iron objects.

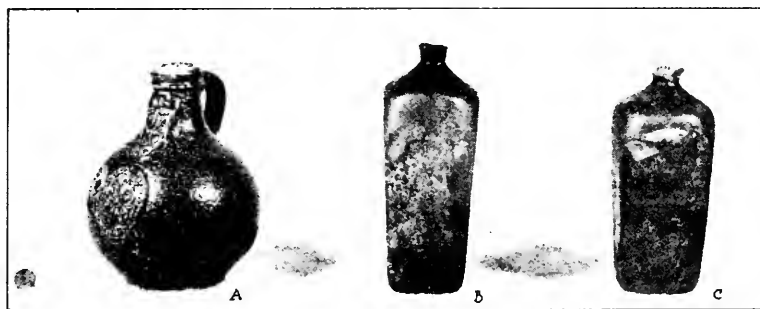
with the Susquehannocks. Bullet moulds (figs. A, B) and iron snuff boxes with brass tops were common (pl. 44, figs. A, C, D, F). One of the brass boxes contained several acorns and pumpkin seeds perfectly preserved (fig. B).

CROCKERY, STONEWARE, GLASS—The only objects found which might have been used for games were two round pieces of colonial crockery. These had been carefully worked into discs and may have been counters in a dice game played by both northern and southern Iroquois.

The wine jug recorded on Location 5, according to Mr. Arthur Woodward, is a Bellarmine (pl. 49, fig. A). These stoneware wine jugs were exported in great quantities into England by Dutch merchants during the sixteenth and seven-

STRICKLER SITE

PLATE 49



A BELLARMINA JUG AND GREEN RUM BOTTLES FOUND IN GRAVES

teenth centuries. Later they were imitated in England, especially at Fulham. The majority of the German jugs were made at the towns of Cologne, Raeren, and Frechen. At one time they were called "Bellarmine" after an unpopular Italian Cardinal of that name who was detested in the Low Countries about 1570-76. The greatest number of these jugs seems to have been imported into England about 1677. Imitations soon appeared and were first manufactured by John Dwight of Fulham between 1671-1684. They usually have a bearded mask on the neck of the jug and at one time this was supposed to be a caricature of the Cardinal. Generally, the mask is accompanied by a rosette, coat of arms, etc.

The Bellarmine recovered on the Strickler farm was probably of German origin, and could have found its way into the

Susquehannock country through either the Dutch or English. The latter called them "greybeards" and their German name was "Bartmann." It probably came in from the south and through the early Marylanders. Fragments of similar Bellarmine have been recovered at Williamsburg, Virginia.

Two square face, green and black glass rum bottles with the burials were contemporaneous with the Bellarmine, and may have been carried to the Susquehannocks from the south (pl. 49, fig. B, C).

GLASS BEADS—The glass beads on the Strickler Site dated from the middle of the 17th century to early in the 18th century. The colors were of almost unlimited range, and forms from the bugle to the delicate seed types were found. Most of them were of early Venetian manufacture and could have reached the region from almost any of the contacted whites. A greater variety and similar types and forms were found on the Washington Borough Site and will be described later.

The unusual forms on this site were long twisted black and blue bugle beads and small globular ones with green streaks. This type is listed in some of the early French inventories and may have come into the country through the Huron-Susquehannock alliance.

In 1607 the first industrial enterprise in the territory of the United States was established in Virginia. It was a glass bottle factory. In 1622 another factory was erected near Jamestown to manufacture glass beads for trade with the Indians. Nothing is definitely known about the Jamestown beads outside of the fact that some of them were supposed to be colored blue. An unusual number of blue beads were found on the site. They did not have the fine finish of the true Venetian beads and may have been made in Virginia.

SUMMARY AND CONCLUSIONS

The objects found on the Strickler Site show that the Indians who used it for a burying ground had an Iroquoian material culture.

Not a single physical measurement could be made with any degree of accuracy as all osseous specimens were badly disintegrated. Every burial showed a secondary handling of the remains, and two mortuary customs were recorded; the known "bundle" and a new "placed bone" type.

This band of Susquehannocks undoubtedly used a platform to hold their dead sometime before placing them into the ground. This was the usual procedure among the early Iroquois tribes. The finest account of their mortuary customs is recorded in General Clark's unpublished notes. His sources are indefinite but he was a careful, cautious student and we believe the following account is accurate.

"The most ancient mode of burial by the Iroquois was first to place the corpse upon a scaffold some eight feet high, made by setting crotches and laying poles across, attached or near to one corner of the cabin of the nearest friend of the deceased. There the body was left exposed till the flesh had completely fallen off. After this the skeleton was buried, placing the feet first, crowning the pile with the skull.

"The practice pursued by Iroquois at the close of the last century was to dress the corpse (if a man) in a shirt, a coat and leggings, sometimes made of skins, at other times of cloth, as was most convenient. A pair of deer skin moccasins covered the feet and a cap of fur the head. The corpse was then ready for burial. The graves were dug about three feet deep. Barks were cut and peeled the length of the grave. Pieces were fitted for the bottom, sides and ends and then placed in the grave. A single broad piece was fitted for a covering. The corpse was then brought to the grave on poles bound together for a bier. He was then lowered into his bark coffin, when an Indian woman approached with a kettle of provisions, a pair of moccasins, with pieces of deer skin and with sinews of the deer to sew the patches in the moccasins, which it was supposed the deceased would wear out on his journey to the land of the Spirits. These were carefully deposited in the bark coffin. Then came an Indian with bows and arrows (or sometimes if a distinguished person a rifle), a tomahawk and knife. These they ceremoniously laid in the coffin and they were considered indispensable to a prosperous and happy journey in procuring provisions in his way to the blissful regions of Ha-wak-ne-u. After these things were deposited the final covering was carefully placed over the whole and the grave closed with earth. This done the Indian women kneeled down around the grave and wept. The men for a time were silent but after a while they set up a doleful cry, chanted the death dirge and all silently retired to their homes.

“When anyone dies in the Time of Hunting they expose his body in a very high scaffold and it remains there until the Departure of the Troop, who carry it with them to the village. There are some nations who practice the same with regard to all their dead and I have seen it practiced by the Missisagues of Detroit. The bodies of those who die in war are burnt and their ashes brought back to be laid in the burying place of their fathers. These burying places among the most settled nations are placed like our church yards, near the village. Others bury their dead in the woods at the foot of a tree; or dry them and keep them in chests till the festival of the dead which I shall presently describe: But in some places they observe an odd ceremony for those that are drowned, or are frozen to death. They have a notion that those who die by a violent death, even though it is in war and for the service of their country, have souls in the Spirit world that can hold no communication with others; and on this principle they burn them or bury them directly, sometimes even before they expire. They never lay them in the common burying place and they give them no part in the great ceremony which is renewed every eight years among some nations, and every ten years among the Iroquois. They call it the Festival of the Dead or the Feast of the Souls. And here follows what I could collect that was most uniform and remarkable concerning this ceremony, which is the most singular and the most celebrated of the religion of the savages. They begin by fixing a place for the Assembly to meet in: Then they chuse the King of the Feast, whose duty it is to give orders for every thing, and to invite the neighboring villagers. The day appointed being come, all the savages assemble and go in procession two and two to the burying place. There everyone labours to uncover the bodies: then they continue some time contemplating in silence a spectacle so capable of exciting the most serious reflections. The women first interrupt this religious silence by sending forth mournful cries which increase the horror with which everyone is filled.

“The first act being ended they take up the carcasses and pick up the dry and separated bones and put them in parcels; and those who are ordered to carry them take them on their shoulders. If there are any bodies not entirely decayed they wash them, they clean away the corrupted flesh and all the filth and wrap them in new robes of beaver skins. then they return

in the same order as they came; and when the procession is come into the village, everyone lays in his cabin the burden he was charged with. During the march the women continue their lamentations and the men show the same signs of grief as they did on the Day of the Death of those whose remains they have been taking up and this second act is followed by a feast in each cabin in honor of the dead of the family.

"The following days they make public feasts; and they are accompanied as on the day of the funeral with dances, games and combats for which there are also prizes proposed. From time to time they make certain cries which they call the Cries of the Souls. They make presents to strangers, among whom there are sometimes some who come an hundred and fifty leagues and they receive presents from them. They also take advantage of these opportunities to treat of common affairs for the election of a chief. Everything passes with a great deal of order, decency and modesty; and everyone appears to entertain sentiments suitable to the principal action. Everything, even in the dances and the songs, carries an air of sadness and mourning; and one can see in all hearts pierced with the sharpest sorrow. The most insensible would be affected at the sight of this spectacle. After some days are past, they go again in procession to a great council room built for the purpose: They hang up against the walls the bones and carcasses in the same condition they took them from the burying place and they lay forth the presents designed for the dead. If among these sad remains there happens to be those of a chief, his successor gives a great feast in his name and sings his song. In many places the bones are carried from village to village, are received everywhere with great demonstrations of grief and tenderness and everywhere they make them presents: Lastly, they carry them to the place where they are to remain always. But I forgot to tell you, that all these marches are made to the sound of instruments accompanied with their best voices, and that everyone in these marches keeps time to the music." (4).

George Alsop writing in 1666 about the burial customs of the Susquehannock apparently did not think much of Maryland's former allies to the north. His contact with them was made shortly before the break between the Cheseapeake English

and the Susquehannock. His account is interesting because it might apply to a site near the Strickler farm. It is as follows:

"When any among them depart this life, they give him no other intomb than to set him upright upon his breech in a hole dug in the Earth some five foot long, and three foot deep, covered over with the Bark of Trees Arch-wise, with his face Du-West, only leaving a hole half a foot square open. They dress him in the same Equipage and Gallantry that he used to be trim'd in which he was alive, and so bury him (if a Soldier) with his Bows, Arrows, and Target, together with all the rest of his implements and weapons of War, with a Kettle of Broth, and Corn standing before him, lest he should meet with bad quarters in his way. His Kinred and Relations follow him to the Grave, sheath'd in Bear skins for close mourning, with the tayl droyling on the ground, in imitation of our English Solemnners, that think there's nothing like a tayl a Degree in length, to follow the dead Corpse to the Grave with. They bury all within the wall or Pallisado'd impalement of their City, or Connadago as they call it. Their houses are low and long, built with the Bark of Trees Arch-wise, standing thick and confusedly together. They are situated a hundred and odd miles distant from the Christian Plantations of Maryland, at the head of a River that runs into the Bay of Choesapeake, called by their own name the Susquehannock River, where they remain and inhabit most part of the Summer time, and seldom remove far from it, unless it be to subdue any Forreign Rebellion." (21).

The unusual Iroquoian custom of making an offering pit in connection with the main burial observed on this site is an interesting new and important discovery in eastern archaeology.

The pottery recovered indicates some southern influence probably Cherokee. The earthenware pipes had both northern and southern characteristics. The Susquehannocks were known to have a northern contact with the Huron but the direct southern influence was unknown. It may indicate a later northwestern migration than that of the main body of the Iroquois.

Algonkian groups on the upper Chesapeake undoubtedly made some cultural impression on the Susquehannocks but this is hard to determine on such a late site so much influenced by white contact. We can safely assign the site to a period between 1629 and 1675.

WASHINGTON BOROUGH BURIAL SITE

Charts 3, 4, 5

The town of Washington Borough, Manor Township, Lancaster County, is built on the top of one of the most important archaeological sites partially explored by the Commission expedition (Chart 3). Students of early Pennsylvania history have agreed that in or near it a palisaded stronghold of the Susquehannock Indians once stood, and the fertile fields surrounding the town are still black from the prehistoric camps of hundreds of warriors and their families.

The boatman of the expedition was Mr. John Funk, who had lived for many years in Washington Borough. He informed us that workmen excavating for a cellar on the property of a Mr. John Keller in the center of the town had found Indian remains. Following up this lead, we discovered the site apparently had been thoroughly dug over by local men hunting for glass beads to sell for relics. Not satisfied with looting the graves on the Keller property, these men had started to excavate under an abandoned logging road adjoining on the west before they were stopped by officials. This intervention saved a narrow strip about twenty feet wide and 100 feet long of the burial site of the ancient village.

The burgess of the town gave the expedition permission to excavate under the road and the results were amazing for the small area explored. Seventy-nine locations were recorded and all evidence indicated that hundreds of burials on the adjoining property had been looted and all archaeological evidence destroyed.

A careful survey was made of the locality and the site was located to permanent landmarks (Charts 4 and 5). The south stake was placed in the center of the abandoned road and the north stake on the high bank of Staman's Creek. All angles were triangulated from both stakes and checked with five foot squares.

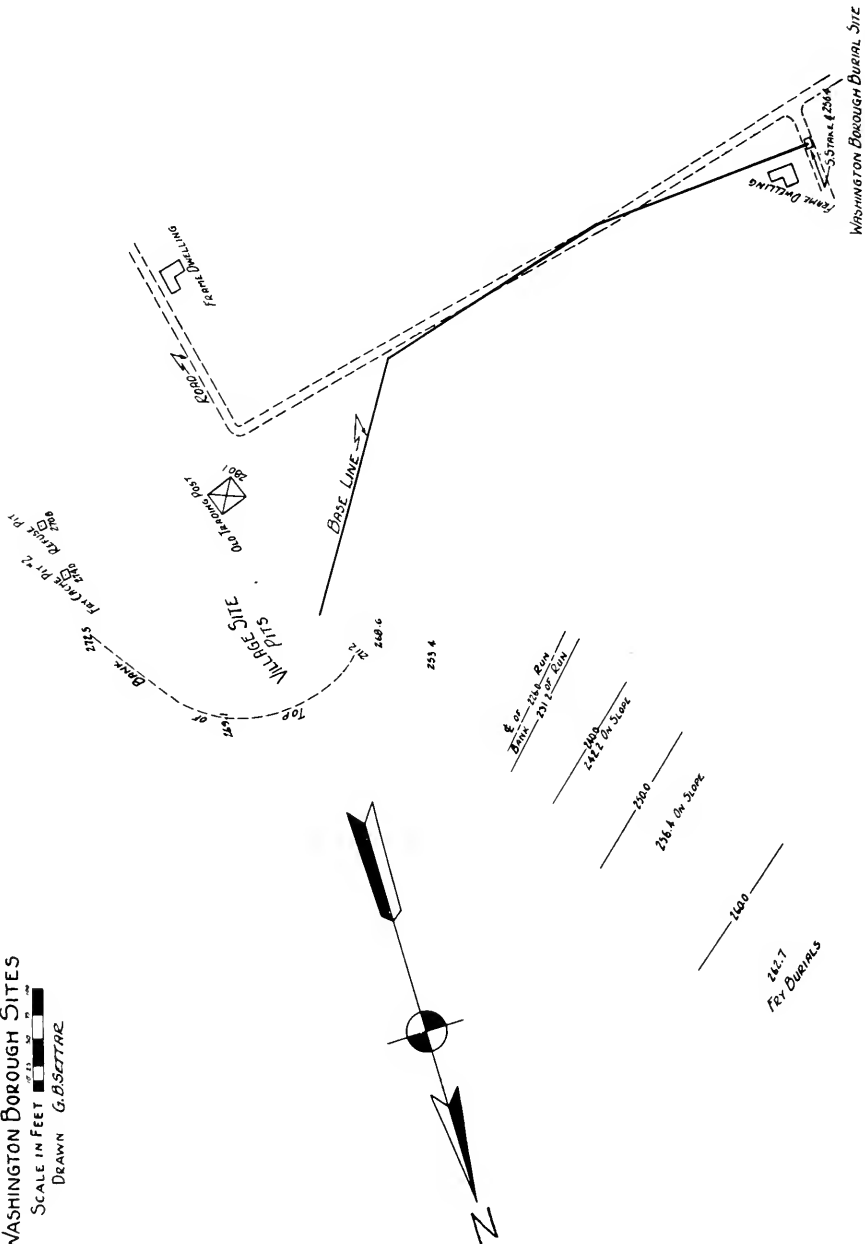
A trench 20 ft. wide was started at the south stake and drifted along the hardpan in a northerly direction. This carried it through Squares 2 and 3 where nothing of importance was recorded.

The first isolated burial was located in Square 6 and it may have been a white man. The bones were in a fragmentary

WASHINGTON BOROUGH SITES

SCALE IN FEET 0 10 20

DRAWN G.B. SETTLE



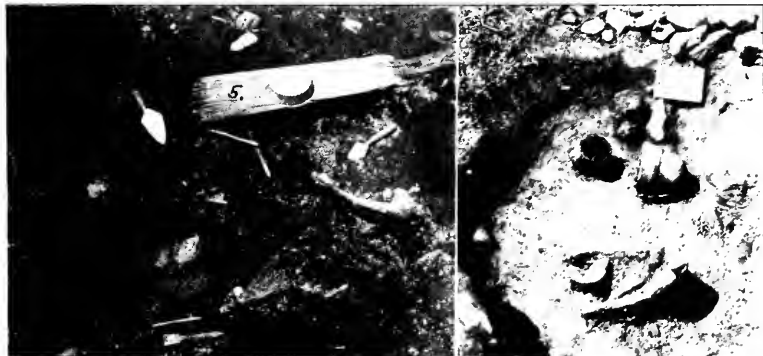
condition and it was impossible to measure them or index the skull. There was not a single object of Indian manufacture in the grave. A sword lying with its hilt to the east near the feet was of sixteenth century Italian type. A long gun barrel rested beside the sword with an iron bullet mold, some lead bullets, and a fragment of a flint-lock. It was not a true Susquehannock type burial such as was found later on this site and may have been the remains of an early white trader.

No. 1 was separated from the other remains in the roadway by more than 15 ft. The earth in the intervening space between Squares 5, 6, 7, 8 and 17, 18, 19 and 20 had not been disturbed. North and west of the latter squares to the edge of the high bank of the stream was located the rest of the undisturbed burials. We will not record the square locations here as they can be seen on the charts. The depths of the numbered and recorded stations varied between 1 ft. 5 in. and 2 ft. 6 in. The earth north of Square 23 had been disturbed several times by the Indians and it was a difficult problem to segregate overlapping interments.

A complete description of each grave here would take too much space and involve repetition. All records are in the files of the Commission and available to anyone interested. Most of the human bones were in fragmentary condition and the same kind of mortuary customs were recorded as on the Strickler Site. All burials were bundle and placed bone types with the exception of Nos. 5, 28 and 38 in which the torsos and crushed skulls were in place (pl. 50). Wherever it was

W. B. BURIAL SITE

PLATES 50, 54



LOCATIONS 5 AND 53 ON THE WASHINGTON BOROUGH BURIAL SITE

50	49	48	47	46	45 ₁₂	44 ₁₈	43 ₁₁	42 ₂₁	41 ₂₃
1	8	9	16	17	24 ₂	25 ₁₀	32	33 ₁₄	40
2	7	10	15	18	23 ₇	26 ₁₀	31 ₁₆	34 ₁₃	39 ₂₂
3	6	11	14	19	22 ₁₀	27 ₁₀	30 ₂₀	35 ₁₄	38
4	5	12	13	20	21 ₈	28 ₁₈	29 ₁₁	36 ₁₃	37

Base Line

WASHINGTON BOROUGH
BURIAL SITE
PLOT #1



SCALE IN FT. 1 2 3 4 5' DRAWN: GDS.

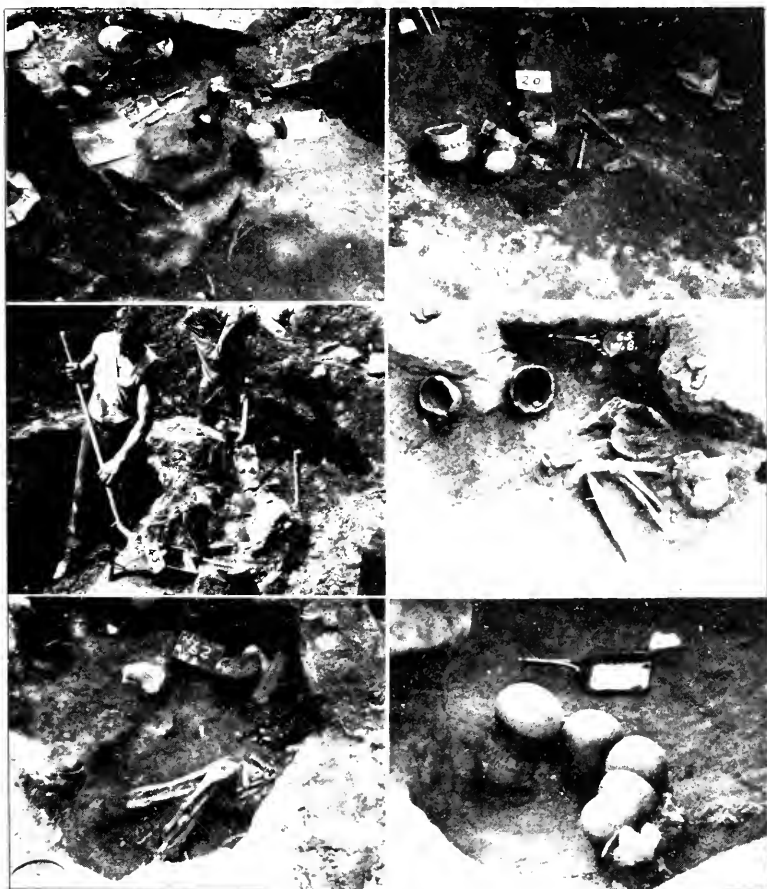
possible, the triangulations were made to human remains, and from the seventy-nine locations recorded in the field notes seven hundred and twelve specimens were noted and catalogued.

The *mortuary* offerings in the graves were usually near the heads. The pottery vessels were deposited along the sides with the *bundle* interments (pl. 51), and in the center between the skull and long bones with the placed bone burials (pl. 52).

The most unusual mortuary custom was noted at location No. 43 (pl. 53). This was a placed bone burial over which a very large earthenware vessel had been crushed. A fragment

W. B. BURIAL SITE

PLATES (DOWN) 51, 53, 56 PLATES (DOWN) 52, 55, 57



VARIOUS LOCATIONS ON THE BURIAL SITE SHOWING FRAGMENTARY HUMAN REMAINS, POTTERY, AND OTHER OBJECTS IN PLACE

of the skull projected from underneath the broken pottery on the west and two tibias were crosswise on the eastern side. A separate fragment of the large vessel was east of the tibias together with a small pot that would hold about a quart. Directly on the top of the large vessel, in about the center, two very small earthenware pots were resting. The large vessel had apparently been placed on its side over the remains and pressure brought to bear until it was broken, after which the two small complete pots were arranged on top and the grave filled in.

Burial 49 was placed bone type with a fragmentary human skull and disintegrated long bones. A crushed pottery vessel was 8 inches north of the skull alongside of a disintegrated human humerus and an indeterminate piece of iron. The jaw bones and part of the cranium of a deer rested upon another fragmentary human humerus northeast of the skull. Spaced carefully around the latter were folded flat pieces of brass, 3 inches square, apparently part of a necklace or belt. The leather between the folds had been perfectly preserved, and at one point where the bone was touched by the metal some human hair had survived.

No. 64 was an excellent example of a bundle burial, recorded at a depth of 1 ft. The skull, a right and left femur, and other indeterminate long bones were crushed on top of a flat stone. Part of a jaw bone had fallen out of the bundle and was found 7 inches to the west upon the rock. Directly east of the skull, 8 inches below, and against the rock, human toe bones and two calcaneums of another burial rested. Scattered through the soil near these later bones were glass beads and 14 inches to the southwest, probably associated, was a crude stone pestle.

No. 66 was of particular interest because of the excellent condition of the four complete pottery vessels found at this location (pl. 57). The fragmentary interment had been made between two large boulders. The location was to a fragment of human skull and part of a femur. Directly south of the former, 10 inches, and on its side, a perfectly preserved vessel was recorded. In a half circle, also south of the skull, 16 inches, three more complete pots with their mouths inverted rested in the center of the grave. Exactly 9 inches east of

location and on the hardpan, six fragments of a rolled brass necklace were found.

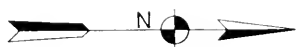
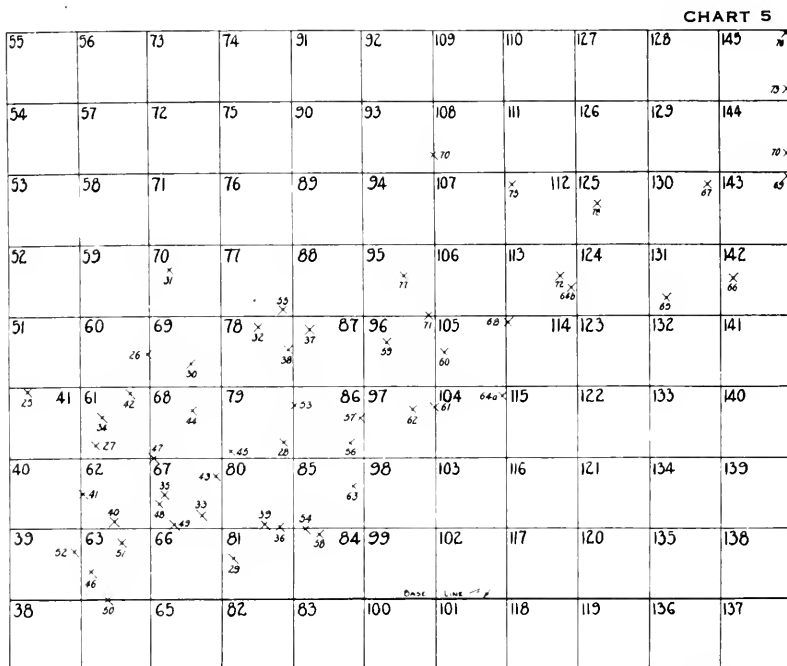
No. 71 was one of the most productive locations excavated as it contained a wide variety of trade and native objects. The disturbance was 3 ft. 3 in. by 4 ft. 7 in. and 3 ft. deep. The crushed skull rested upon the hardpan in the western part of the grave, and touching it on the east was an iron axe, and on the west a pottery vessel. Directly east of the skull, 2 ft. 3 in., was a fragment of deerskin, underneath which was recorded a piece of a woven rush mat. At 120° 2 ft. was a small pottery vessel; at 110° 4 ft. fragments of a large vessel; at 90° 2 ft. was an unusual urn-shaped vessel. Scattered between 60° and 80° were fifteen triangular chipped stone arrowpoints. Directly south of station 8 in. was a brass kettle containing seeds, fish and animal bone. Against the wall, on the hardpan, in the eastern part of the grave was a large lump of potter's clay. Standing upright against the south wall were several indeterminate long bones, indicating this was a placed bone burial. Scattered through the whole disturbance were hundreds of glass beads of several varieties and colors.

No. 77 was a bundle burial without a skull. The grave was 4 ft. long, 2 ft. wide and 2 ft. deep. The fragmentary long bones rested against the south wall, and a broken human femur was laid flat on the hardpan on the extreme southern end. A sword blade, two metal rods and an earthenware pipe were mixed with the latter bones. Directly east of them, 6 in., was a stone pipe pendant. In the center of the grave were two large brass jinglers with attached buckskin cords, and a furled brass smoking pipe.

ARTIFACTS

With this very brief description, from our field notes, of seven typical burials on the Washington Borough Site, we will turn to a study of our collection. We find that it shows an incomplete series of the products of Susquehannock industry, together with many objects obtained from the early Indian traders. It also gives us some idea as to the degree of advancement reached by this almost unknown group of Iroquois about whom accurate historical accounts are so pitifully meager. If by our study we can lift the veil of the past a little further and obtain a more thorough knowledge of their material culture, our efforts will not have been in vain.

The most interesting of all the objects recovered by the expedition on this site was the pottery. A total of two hundred fourteen vessels was found and they ranged in size from 2½ in. to 37 in. in height. More than sixteen round bottom forms, with innumerable variants of design, are represented in this group. We are safe in saying it is to date the largest number of restorable vessels ever recovered from an Iroquois site.



WASHINGTON BOROUGH
BURIAL SITE
PLOT #2

SCALE IN FT. DRAWN GDS

The Susquehannock Indians probably made pottery in the same manner as other tribes of the east and southeast. The method is known as coiling and the best early record we have of this is by Butel Dumont who wrote about the American potter's art in 1753. His description could be applied to the Washington Borough pottery even to the use of shell for tempering. He says:

"After having secured the proper kind of clay for this work and having cleaned it well, they take shells, which they grind, reducing them to loose powder, very fine; they mix this very

fine powder with clay of which they have made provision, and wetting the whole with a little water, they knead it with hands and feet to make a paste, from which they fashion rolls, six or seven feet long, of whatever thickness they find convenient. Do they wish to make a plate or vase? They take one of the rolls by the end, and establishing with the left hand the center of the piece they have in view, they wind the roll about this center with admirable speed and dexterity, describing a spiral; from time to time they dip their fingers in water which they have always by them; and with the right hand they smooth the inside and outside of the vase they are planning to make, which without this attention becomes corrugated. By this method they make all sorts of earthen utensils. The firing of this pottery does not cost them much trouble. After drying it in the shade they light a great fire, and when they have as much embers as they need, they clean a place in the middle, and there arrange their vessels, and cover them with charcoal. It is thus that they give them the burning they require, after which they can be used on the fire, and have the same texture as ours. There is no doubt that their durability can be attributed to the powdered shells mixed with the clay they use." (22).

It might be added to Butel Dumont's description that vessels were often started in fragmentary pot bottoms or a gourd of the proper shape, several bottoms that may have been used as pottery starters were found on both the Strickler and Washington Borough Sites. In addition to using charcoal dried dung was often employed in baking.

Several masses of kneaded potter's clay were found in pits on the Washington Borough Village Site and one large lump with Burial 71.*

USES OF POTTERY—Most of the vessels recovered had been used over an open fire for cooking. Like those on the Strickler Site all of them had been waterproofed on the inside and many showed signs of long use as they were chipped and worn from placing them upon stone supports.

Several vessels had apparently not been used over a fire. Most of these were delicate, beautifully modeled, and may have been for ceremonial purposes. The very small pots

* The village site will be described later as the Frey farm.

recorded were probably soup containers, cups, or children's toys. No bowls were recovered on this site.

The common form of vessel noted at Washington Borough had a spheroidal shaped body, topped by a wide, slightly bulging neck or collar. The smallest would hold about one-half pint and the largest about three quarts. The ware averaged three-eighths of an inch in thickness from collar to bottom (pl. 59). The collars varied in size but averaged one-third the height of the vessels. Their designs consisted of horizontal rounded grooved lines interrupted by regular perpendicular grooves. The upper projection had short obtuse or acute

W. B. BURIAL SITE

PLATE 59



THE COMMON FORM OF VESSEL NOTED ON THE SITE
(Height—left—9 in.)

grooved lines running to the horizontal pattern. All the vessels had two elevated notched angles opposite each other on the rim with a molded human face upon them. The faces were triangular shaped and the nose and chin protruded out from the vessel. Most of them had a grooved, triangular line running around the face; a few had two lines and one had a punctate pattern. On all the vessels, except one, the face had been molded in when they were made. The exception was one of the large vessels for which the faces had been molded separately and laid on the rim before baking. They had apparently become detached and were not found.

According to William M. Beauchamp, a group of Iroquois living on Montreal Island, Canada, had an ingenious contrivance for hanging pots over the fire. He says:

"They have no doubt found by experience that when an

earthenware pot was hung over the fire by strings or withes tied to the outside, the flames would sometimes reach the perishable means of suspension, burn it and allow the pot to fall, and its contents to be lost. Hence they contrived a mode of fastening the cord within the throat of the vessel where the fire could not reach it. This hook for suspension was made in the shape of a human head and neck, the hole for the cord being left behind the neck. Many of these heads were found detached, and their use was not known till the fragment illustrated was found." (23).

Masks used for ceremonial purposes were, and still are, common among Iroquoian groups. On many sites in both Pennsylvania and New York small masks and figurines made of

W. B. BURIAL SITE

PLATE 60

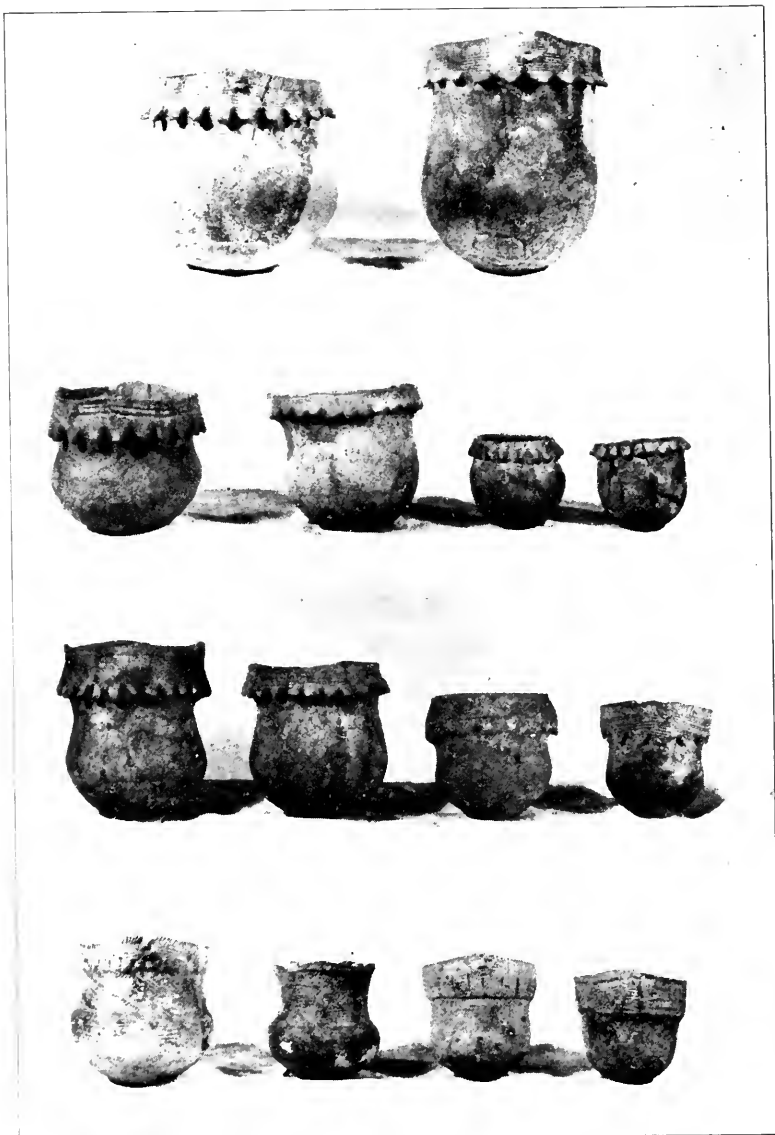


FIGURINE, MASKS AND TURTLE EFFIGIES FROM BURIALS IN WASHINGTON BOROUGH

Figures A, B, and F, were recovered by Gerald B. Fenstermacher, of Lancaster, Pa.

W. B. BURIAL SITE

PLATES (DOWN) 62, 61, 63, 64



POTTERY VESSELS FROM THE WASHINGTON BOROUGH SITE

(Heights: Plate 62, left 10 in; Plate 61, left $6\frac{1}{2}$ in.; Plate 63, left $7\frac{1}{2}$ in.;
Plate 64, left 7 in.)

stone and earthenware have been found (pl. 60). Those molded in the pottery, however, may not have had any particular religious significance and probably served principally as hand grips or for suspension.

The second form found on this site represented some of the finest examples of the Iroquois potter's art and ranged in size from one-fourth pint to gallon containers. It was a globular type vessel with restricted neck and an overhanging collar sloping into the rim. The patterns were slightly rounded, grooved, horizontal lines below short oblique indentations. This pattern was reversed on several vessels and a few had horizontal, vertical and diagonal grooves. Several had four upper projections but most of them the usual two (pl. 61). The average thickness of the ware on these vessels was three-eighths of an inch except on the lower parts of the collars where large projecting nodes were evenly spaced all around. Many had collar patterns similar to Form 1, a few had two human faces on upper projections but the majority lacked this embellishment. One large vessel had three deep notches in the rim above the faces (pl. 62).

Several variants of this form were recovered. Two had three grooves converging below the face on the collar, which were intended to represent a body, and the horizontal grooves ran around the top of the collar, and diagonal ones below. The latter were intercepted at the bottom by short perpendicular grooves. The second variant, of which there were also two vessels, had the regular pattern with spaced, inward, sloping, indented nodes below the collar (pl. 63).

Vessels similar to this second form have been found on Andaste sites near Athens, Pennsylvania (24).

The third form was also similar to Form 1, without the human face on the rim. The average thickness of the ware was three-eighths of an inch on the collars and two-eighths in the bodies of the vessels, as a result most of this type were found in fragmentary condition. The outward flare of the collars was pronounced and a series of chevron grooved patterns instead of the perpendicular grooves was used as decoration.

Four little vessels in this group proved to be exceptions as far as the ware was concerned. The smallest would hold about one-fourth pint and the largest about one-half pint, and

the ware was heavy at the bottom of the pot and thinned to a sharp edge on the rim.

Form 4 was also similar in many respects to Forms 1 and 3 but had an added design at the base of the collar in the shape of evenly spaced finger indentations. Both the horizontal groove and chevron patterns were found on the collars, and in triangles between the latter, horizontal, straight line and punctate decoration was used. Short perpendicular or oblique lines below the rim usually formed the top edge of the design around the collar (pl. 63).

W. B. BURIAL SITE

PLATE 65



TWO OF THE FINEST EXAMPLES OF THE ANCIENT IROQUOIAN POTTER'S ART
(Height: B—8 in.)

In Group 5 the ware was heavier than in Group 4 and instead of finger decoration at the base of the collar, a half round punctate and elliptic design was used.

We could describe many variations of the punctate and grooved designs on the various forms, as each individual potter had, apparently, worked out a method for identifying the vessels he made. This was done by adding an extra bit of flare to the collar or leaving out or adding a pattern. No two of the vessels were exactly alike and it was clear that the Susquehannocks were not all clever potters (pl. 64).

Two forms were undoubtedly made by the real experts of the tribe (pl. 65). These vessels are both outstanding examples of American ceramics. Fig. A we will have to classify as a vase. The design and form of the vessel was tastefully and

skillfully worked out and show considerable progress in the potter's art on the part of its maker. Its base was semi-globular running into a long conical neck surmounted by a broad flaring collar decorated with grooved lines and four human figures. These figures had their arms at their sides and projected slightly out from the rest of the collar. The heads were near the rim and above them were notched angles. The ware was reddish brown in color and slightly less than two-eighths of an inch in thickness. This particular vessel was found in perfect condition.

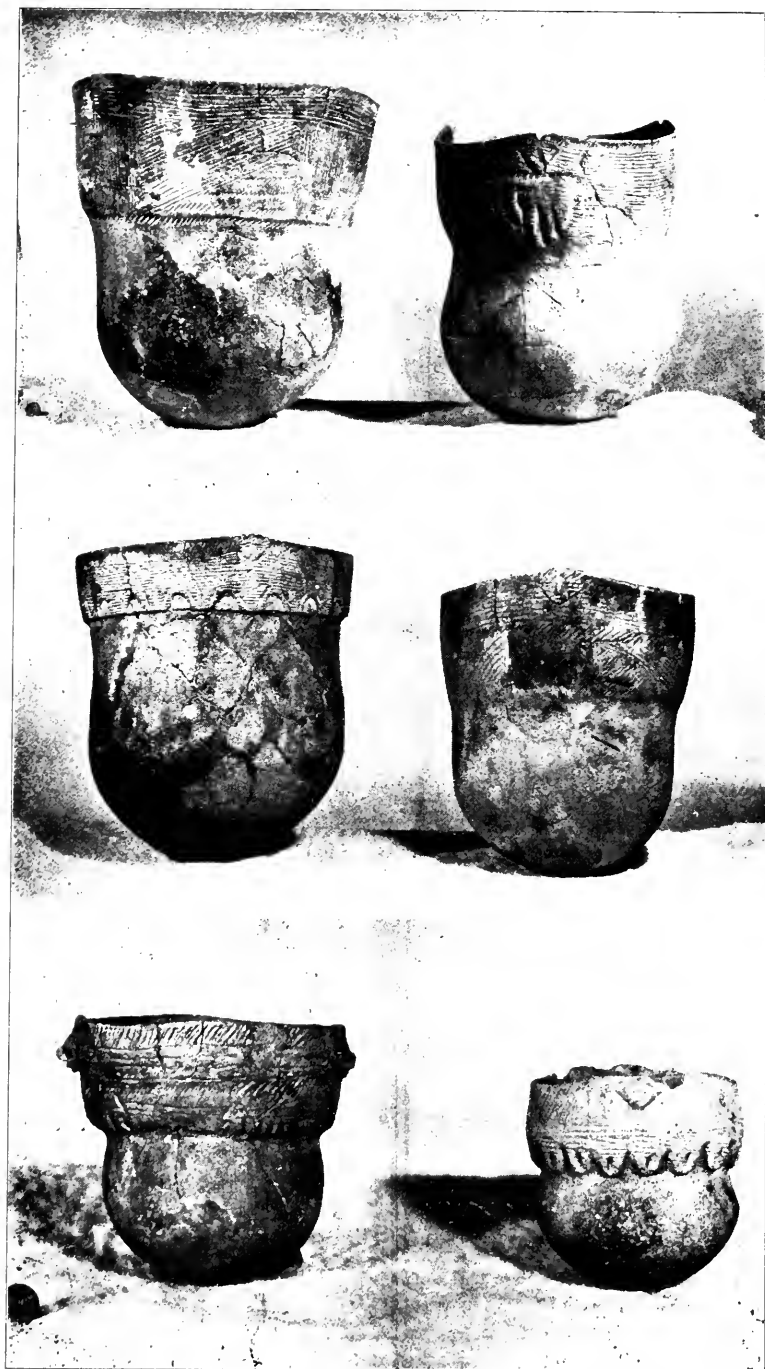
W. B. BURIAL SITE

PLATE 66



AN UNUSUAL POTTERY VESSEL WITH NO UPPER PROJECTION

One of the finest examples of the Iroquoian potter's art recovered is represented in fig. B (pl. 65). The vessel was eight inches high with a semi-globular base surmounted by a $3\frac{1}{2}$ in. collar. The rim was decorated with sloping, grooved lines beneath which horizontal grooves ran around the vessel. This design was repeated to the base of the collar except where it was intercepted below the two upper projections of the rim by chevron patterns, which outlined the torso of two human figures with triangular faces. Two thin cylindrical pieces of earthenware had been squeezed together in the center, separated at the ends, and placed on the vessel to form the knees



LARGE COOKING VESSELS AND SMALL JARS WITH UNUSUAL MOULDING ON THE COLLARS

of the figures. These were not strong enough to be practical handles and were purely decorative.

An unusual vessel with no upper projections and a narrow plain rim is represented in (pl. 66). It was a semi-globular urn form with a narrow neck surmounted by a projecting rim with spaced indentations on its lower edge. The ware averaged three-eighths of an inch in thickness, was reddish brown in color and pitted.

In (pl. 67), left, the usual pattern is represented with triangular human faces below which two projecting nodes were molded to represent the paws of an animal, one the hands of a human.

W. B. BURIAL SITE

PLATE 71



DOUBLE NECKED VESSELS THAT MAY HAVE BEEN USED IN CEREMONIES.
THE LARGE VESSEL WAS RECOVERED BY GERALD B. FENSTERMACHER
(Height: left 10 in.)

One large complete vessel, already described with Burial 43 and fragments of two other large ones were found (pls. 68, 69). These had semi-globular bottoms surmounted by a conical collar with straight line, incised and punctate patterns.

The vessels represented in (pl. 70) were of particular interest because of their urn-like forms. Their bottoms were rounded and surmounted by cylindrical bodies converging into wide bulging collars. Two forms had three projections on the rim and crude decorations on the bodies which were worn and chipped from use.

Pottery vessels are still being made by Indian tribes for ceremonial use, and those represented in (pl. 71) may have been for this purpose. They were elaborate affairs and showed very little use over an open fire.

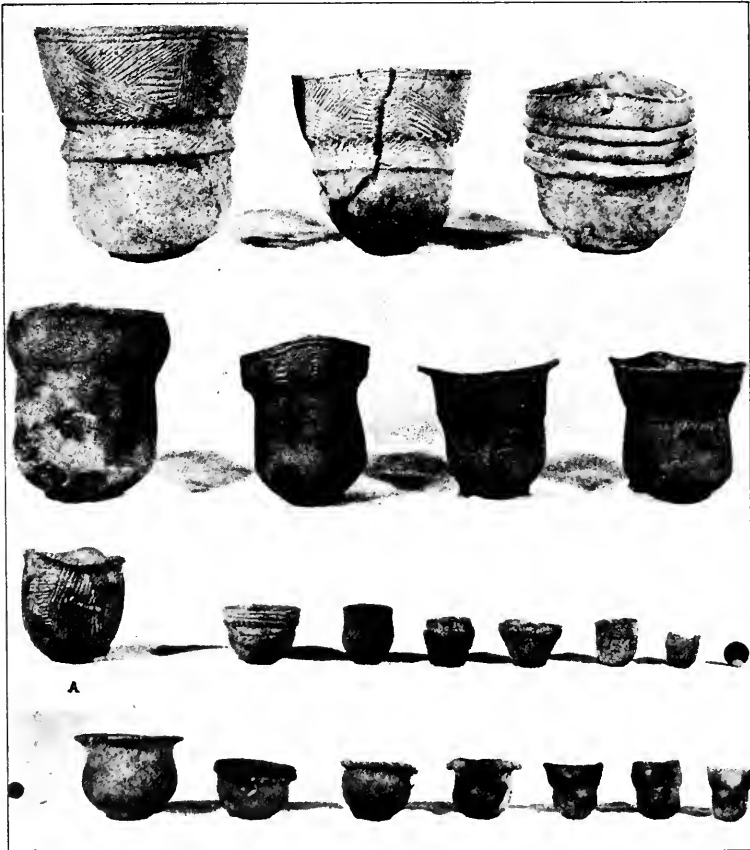
Only two vessels of the Strickler Form 3 were recorded. These all had the large plain, bulging collar, a combed body and a thin rim edge.

Several small vessels are represented in (pls. 72 and 73). They had a variety of forms and patterns too numerous to describe in detail here.

We have discussed the pottery of the Susquehannock as

W. B. BURIAL SITE

PLATES (DOWN) 74, 70, 73 AND 72



URN-LIKE FORMS AND SMALL VESSELS OR CUPS

found on two of their burial sites. That the potter's art deteriorated with white contact is shown by the difference in the ware and forms recovered. The vessels with the pre-historic burials at Washington Borough were of finer quality than those

on the late contact Strickler Site. It was only natural that upon obtaining more durable containers of metal from white men the Indians would use them in preference to the fragile earthenware. The fact that so much pottery was found with the burials indicates a transitional period.

SMOKING PIPES—Unlike the Strickler Site, pipes were rare on the part of the Washington Borough Site worked by the

W. B. BURIAL SITE

PLATE 75

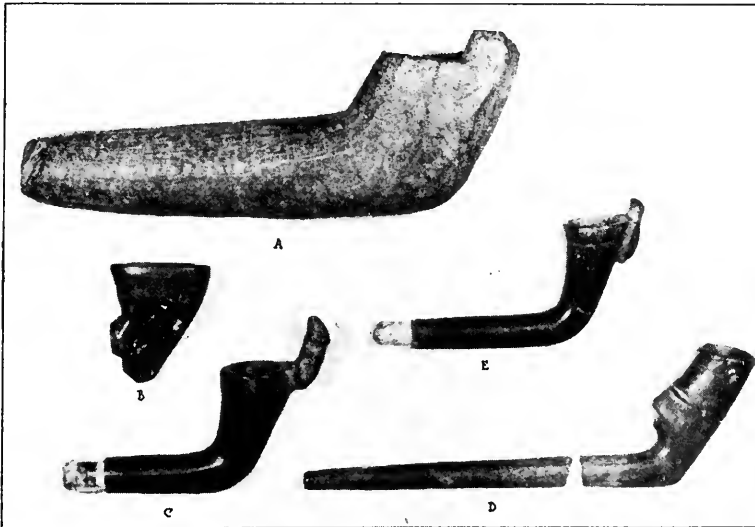
**SMOKING PIPES OF STONE**

Figure A, shows how a pipe is made. B, was drilled for suspension and D, a smoothly finished pipe from the Fenstermacher collection in the State Museum

expedition. Two of those recovered were made of stone; one, of earthenware; and one, of brass.

An interesting unfinished stone pipe with Burial 23 is represented in fig. A, (pl. 75). It had been roughed out of a piece of steatite and its maker undoubtedly intended to place an effigy on the front of the bowl. The chipped stone showed just how the rough preliminary work of making a pipe was done. The fact that its owner had white contact was indicated by a contemporaneous coiled brass ear ornament.

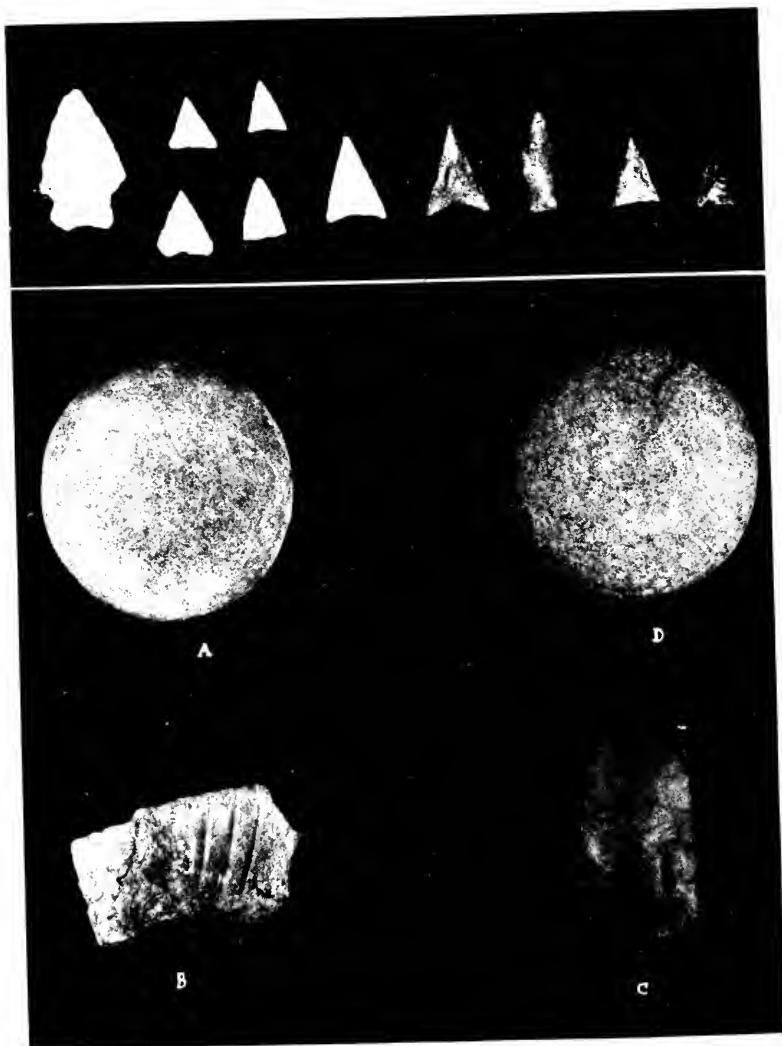
The earthenware smoking pipe together with one made of stone and another of sheet brass was recorded with Burial 77. The first was a trumpet type, the second triangular shaped with a perforated projecting lug beneath the bowl, probably

for secondary use as a pendant (pl. 75, fig. B). The third was a crude affair and may represent an experiment on the part of some progressive Indian or trader.

STONework—Most interesting in the chipped stone products of the Susquehannock were their arrowpoints (pl. 76). With few exceptions they were triangular and made of jasper,

W. B. BURIAL SITE

PLATES (DOWN) 76, 79



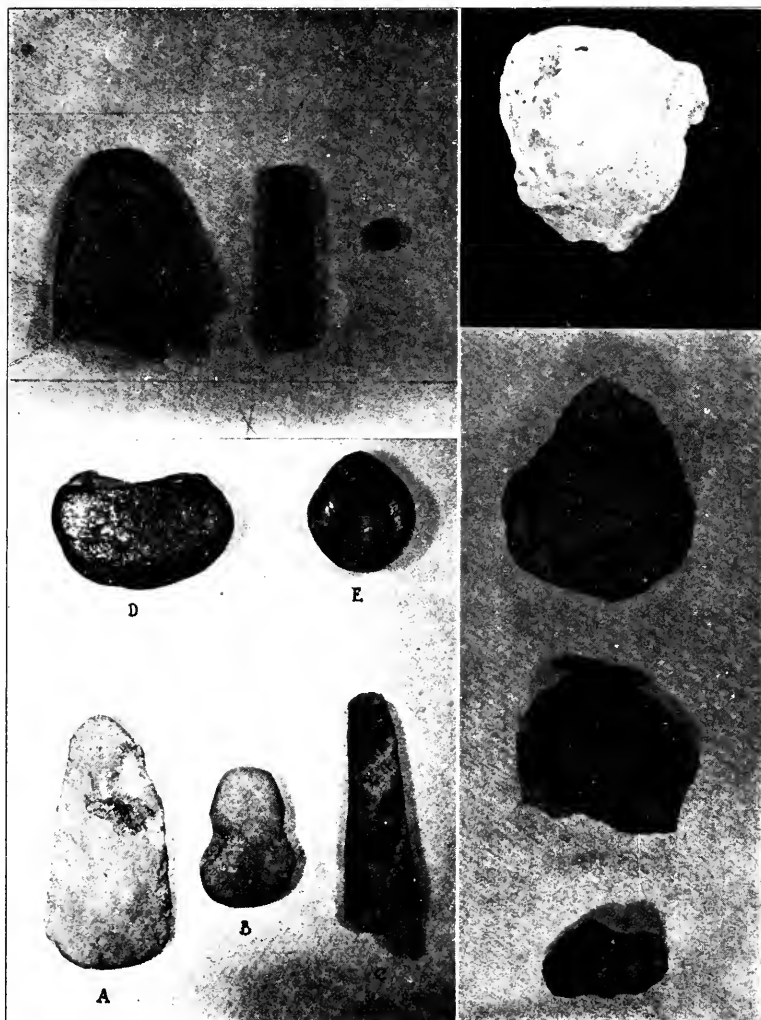
OBJECTS OF STONE MADE BY THE SUSQUEHANNOCKS

chert, rhyolite and white quartz. The tangs on all the points were longer than on most of the New York State Iroquoian triangular types, and were probably so made to facilitate attachment. Several groups of from five to eight points were found together and their positions indicated that they had been attached to shafts when placed in the graves.

PLATES 77, 78

W. B. BURIAL SITE

PLATE 80



OBJECTS MADE OF STONE

Plate 77, (left) represents a section of an intrusive bannerstone. Figures D, E, on Plate 78 are made of lignite

WHITE CLAY AND CLAY MIXED WITH YELLOW AND BLACK PIGMENT, USED AS PAINT

The exception was a crude stemmed fishtail type rhyolite point found at Burial 47 and a stemmed quartzite point at 65. Both of these burials were unquestionably those of Susquehannocks living in the historic period. Sixty-five had in addition to the stemmed quartzite point a fragment of a winged banner-stone of Algonkian origin (pl. 77). Like white men of today the Indians found these ancient objects of their predecessors and brought them home as curiosities.

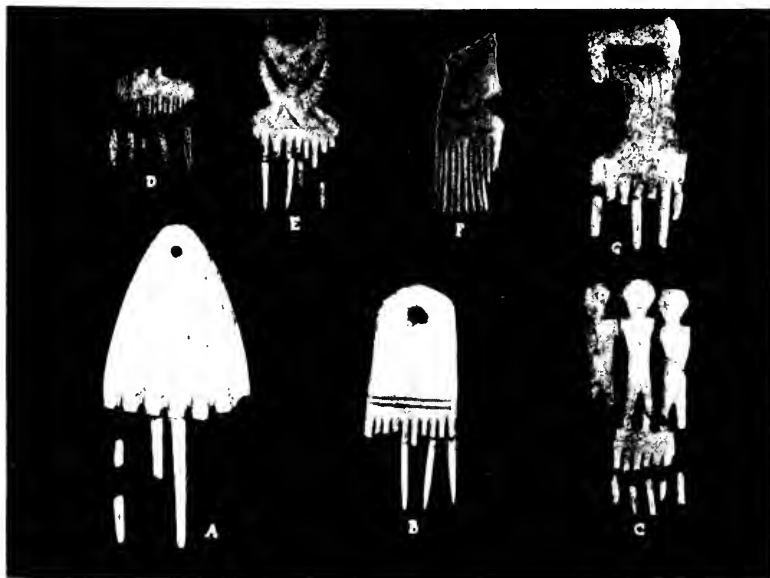
With Burial 62 a number of flint-chips for arrowhead making were found carefully piled on the northwest edge of the grave together with some jaspilite chips.

Three interesting stone objects are represented in (pl. 78). Fig. A was chipped on the sides to form a celt shaped artifact. Fig. B was similar in form and notched on opposite sides. Fig. C was used for spreading or crushing paint, as one end was covered with red pigment.

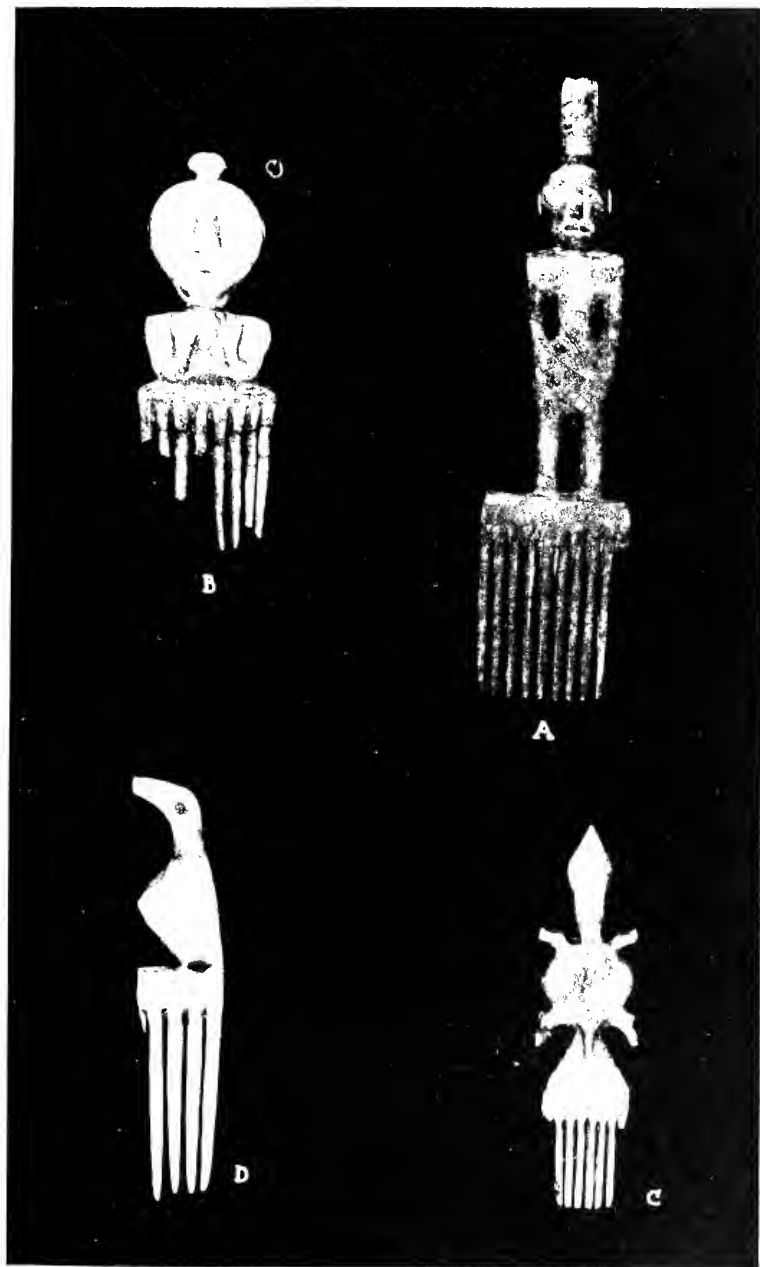
Several so-called hammerstones were found, and fig. A, (pl. 79), represents an unusually fine example which shows secondary use as a pottery smoother. It had been worked on the edges, and on one side had a flat smooth surface. Fig. B is

W. B. BURIAL SITE

PLATE 81

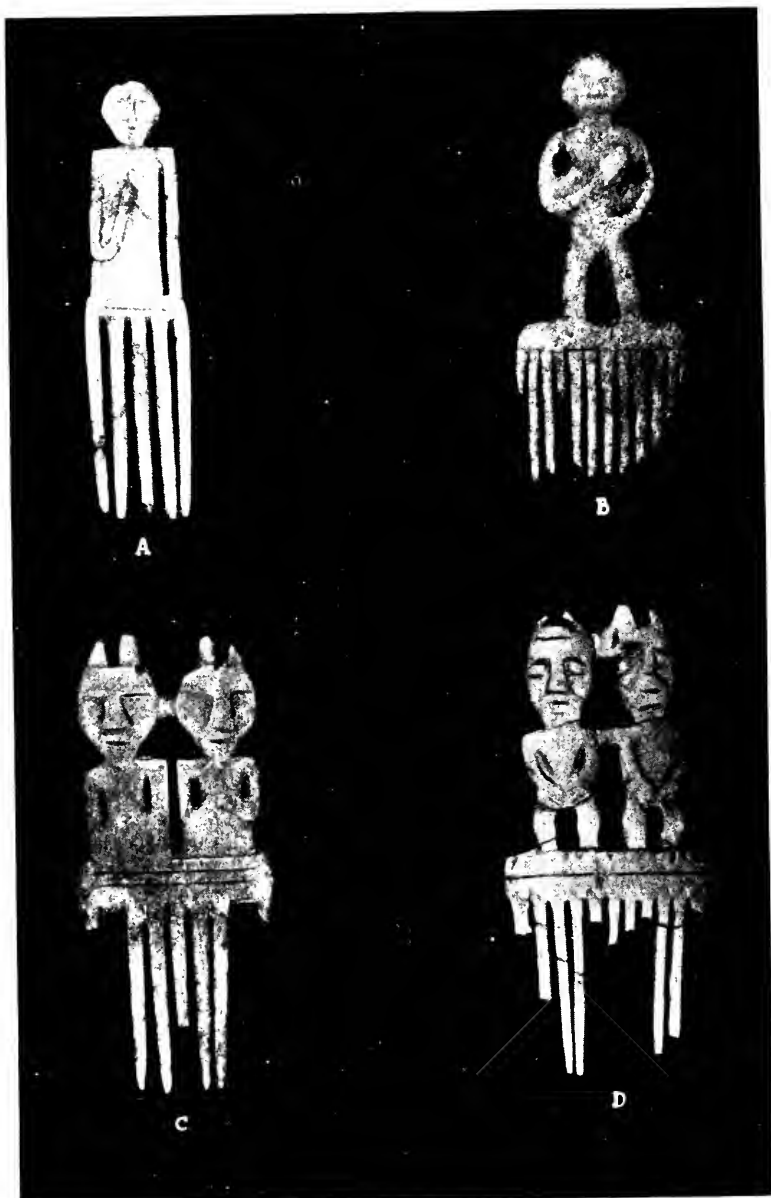


FRAGMENTARY SECTIONS OF CARVED BONE AND ANTLER COMBS



CARVED EFFIGY COMBS MADE OF BONE AND ANTLER

Figures A, and B, represent human forms. Figure C, may represent a turtle and D, is half of a delicately carved comb representing a bird



COMBS MADE OF BONE

Figures A, and B, are human forms; Figures C, and D, may represent the "horned devils" described by Captain John Smith

commonly called a sinew stone. It had the customary grooves rubbed into it, probably from sharpening smooth edged tools, instead of rubbing sinew for threads. Fig. C is a crude, sharp edged celt.

The fact that the Susquehannock occasionally used or found fragments of steatite containers was established by a small piece of a heavy vessel made of this material recovered with Burial 54.

That lignite was prized for ornamental rather than utilitarian use was shown by two carefully worked and polished pieces of this material found with Burials 13 and 27 (pl. 78, figs. D, E).

PAINTS—Hematite was utilized for obtaining pigments for painting, and a considerable quantity was recovered with the burials. It was mixed with clay to obtain various shades of red. Many lumps of natural white clay were found together with yellow and black pigments (pl. 80).

BONE AND ANTLER—Outstanding among the few bone and antler objects from this site were fragmentary pieces of carved combs. These are known to have been used by many Iroquoian groups from prehistoric times well into the colonial period. Many beautiful specimens have been found on New York State sites but the combs from Washington Borough are among the first recorded from Pennsylvania.

There is a wide variety of forms and types of combs in the collection and they show that the Susquehannock Indian bone and antler workers advanced along with the artistic potters of the tribe. Many of the combs recovered could have been used for practical utilitarian purposes. They were primarily, however, symbolic and decorative, and were probably worn by women. If the warriors practiced the usual Iroquoian custom of roaching their hair from the forehead to the back of the neck in a narrow strip, and cutting it off close from their ears up to the roach, they could not have had much use for a hair comb.

Seven fragmentary combs were found on the burial site (pl. 81) and eight complete ones on Washington Borough village sites (pls. 82, 83). As there was no particular difference in their types we will describe all of them here.

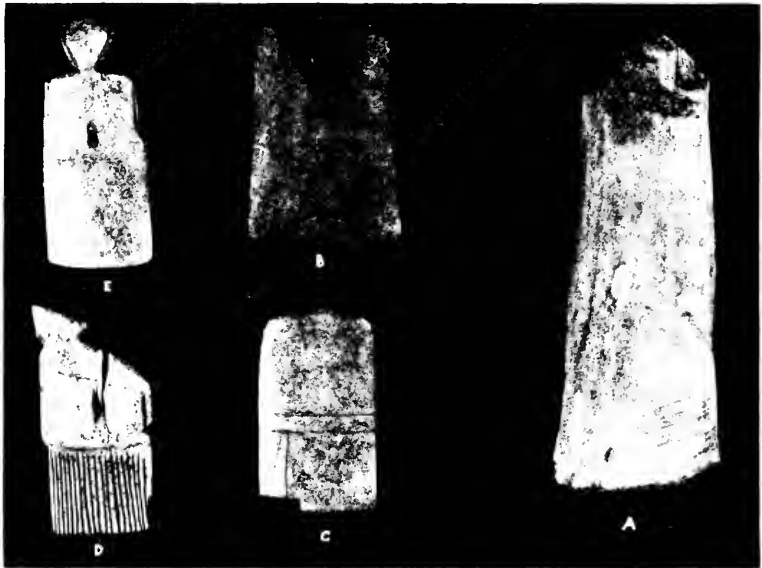
Objects illustrating the various steps in the construction of a comb out of bone and antler were also found on the two sites and are represented in (pl. 84). Fig. A was a roughly worked

piece of antler probably intended for a comb; B. was a smoothed piece of bone roughed into the shape of a comb; C. was antler smoothly worked and ready to be carved; D. was a partially carved comb.

The most interesting of the bone combs from the burial site is represented in Fig. C (pl. 81). It had three elaborately carved human figures on the top with their arms crossed and hands on their own shoulders. The teeth were delicate and it had contained approximately fourteen.

W. B. SITES

PLATE 84



OBJECTS ILLUSTRATING THE VARIOUS STEPS IN THE CONSTRUCTION OF A COMB

The position of the hands of the various figures on the combs together with the types of hairdressing represented could lead one more familiar with ancient Iroquoian and Algonkian customs and ceremonies well into the realm of fact and fancy, as several skeletons found by the expedition on the Shenk's Ferry site had their hands placed in death in positions like those on the combs at Washington Borough.

Fig. F. (pl. 81), represents half of one of the few plain combs found by the expedition. The teeth were very delicate and the complete comb had contained about twenty-five. Fig. A was the heaviest comb recovered. It was made of antler and at the

top had been perforated for suspension. It had seven coarse heavy teeth and may have had secondary use as a pot comb. Fig. D, (pl. 82), was half of a handsome bone comb with two birds facing each other on its top. It had ten rather heavy teeth and the eyes of the bird were represented by round holes halfway through the bone in which a black pigment had been placed. Fig. C represents a turtle with a large head. It was made of bone and is an unusually fine example of carving.

Among Iroquoian groups the clan descent is still matriarchal and the clan once played a very important part in the social organization of the tribe. The lineal descent, always through the female line, gave certain hereditary rights to public office and trust. The clans usually took their names from some animal, bird, reptile or other object that may have been regarded as a guardian deity. At Washington Borough the forms of turtles and birds carved into combs were found. The Wolf, the Turtle, and Bird clans still survive among existing Iroquois.

The "horned devils," Captain John Smith described among these people, were found carved upon their combs and were probably clan deities. These figures are represented in figs. C, D, (pl. 82) and fig. E, (pl. 81). The latter was a beautiful and nearly perfect bone comb. Several of the delicate teeth were missing and the elaborately carved back was partially decorated with an incised chevron design. The horned head had three shallow holes to represent eyes and nose, and two mouths, one in each cheek. Figs. E and D, (pl. 83), represent a pair of horned beings male and female. On the former only the upper part of the body had been carved out but on the latter two full figures were standing on the comb above the teeth.

It is unfortunate that Captain Smith did not tell us more about the so-called "devils" among the Susquehannock. Whoever these horned deities were in the pantheon of the tribe we know they were of both sexes.

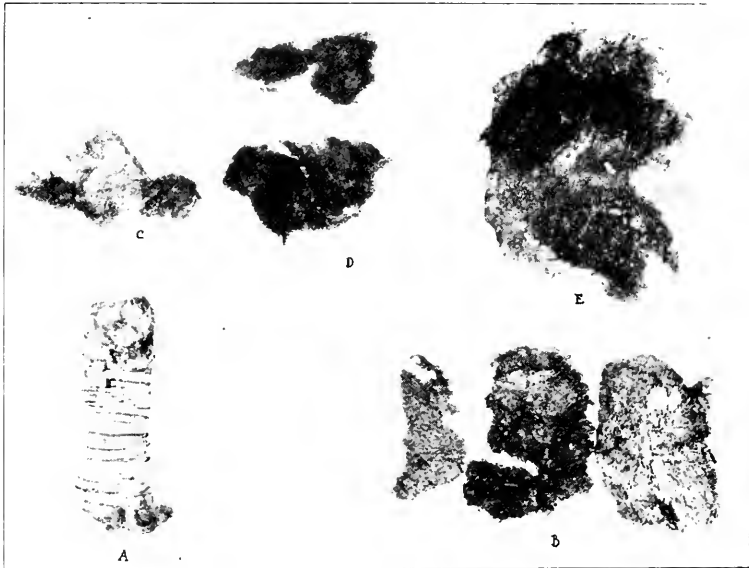
George Alsop writing about the Susquehannock Indians in 1666 refers to the "devil" as being one of their deities. Without going into the matter thoroughly he probably took it for granted that the horned figure represented his satanic majesty. He says:

"As for their Religion, together with their Rites and Ceremonies, they are so absurd and ridiculous, that it is almost a sin to name them. They own no other Deity than the Devil,

(solid or profound) but with a kind of a wild imaginary conjecture, they suppose from their groundless conceits, that the World had a Maker, but where he is that made it, or whether he be living to this day, they know not. The Devil, as I said before, is all the God they own or worship; and that more out of a slavish fear than any real Reverence to his Infernal or

W. B. BURIAL SITE

PLATE 85



HAIR AND SKIN PRESERVED BY VERDIGRIS FROM BRASS KETTLES

Figure A, is a wrapped section of human hair which verified the method of hairdress indicated by Figures A, and B, (Plate 82). Figures B, C, D, and E, represent bear, deer, and beaver hides

Diabolical greatness, he forcing them to their Obedience by his rough and rigid dealing with them, often appearing visibly among them to their terrour, bastinadoing them (with cruel menaces) even unto death, and burning their Fields of Corn and houses, that the relation thereof makes them tremble themselves when they tell it.

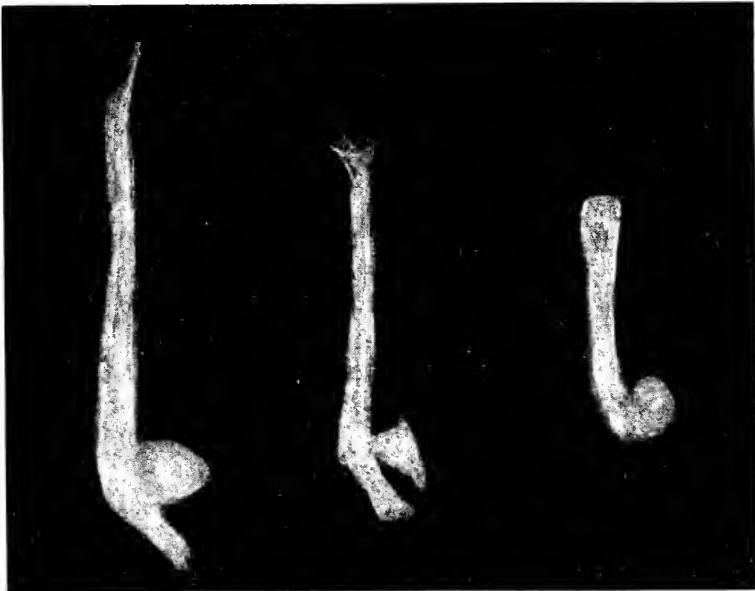
"Once in four years they Sacrifice a Childe to him, in an acknowledgement of their firm obedience to all his Devillish powers, and Hellish commands. The Priests to whom they apply themselves in matters of importance and greatest distress, are like those that attended upon the Oracle at Delphos, who by their Magic-speels could command a pro or con from

the Devil when they pleas'd. These Indians oft-times raise great Tempests when they have any weighty matter or design in hand, and by blustering storms inquire of their Infernal God (the Devil) How matters shall go with them either in publick or private." (21)

Fig. B, (pl. 83), represents an antler comb, with an effigy of a man carved at the top. The teeth were heavier than usual for this type and the features of the figure were in profile. Figs.

W. B. SITES

PLATE 86



MINIATURE WAR CLUBS OF BONE

Recovered by Gerald B. Fenstermacher, Lancaster, Pennsylvania

A and B (pl. 82) were of particular interest because they show the styles of headdress used by the Susquehannock. The custom of piling the hair on the top of the head and wrapping it with cords to hold it upright as indicated in A, was verified by finding a large roll of wrapped hair preserved by contact with a brass kettle (pl. 85, fig. A).

Some of the combs found on the burial site may have been fashioned with steel tools furnished by white men, but those from the village site, found in the refuse, were made with native tools before the contact. Most of them show marks where they were suspended probably from the neck or on a

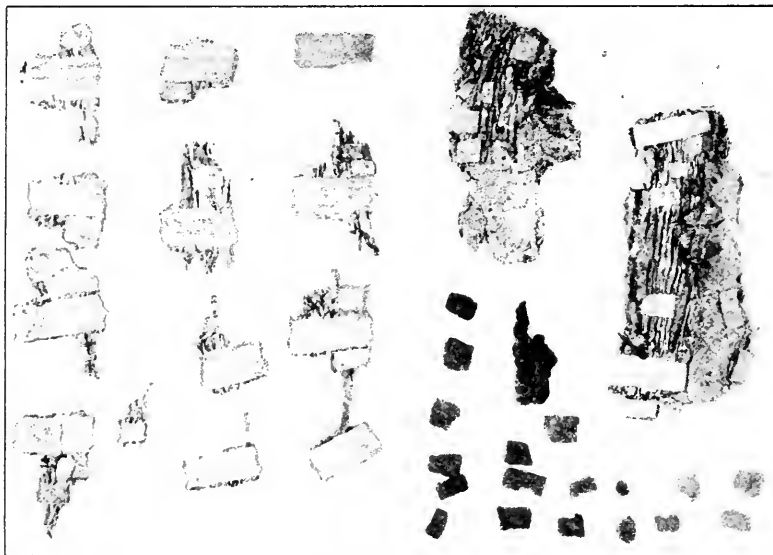
girdle worn around the waist. Those found with the burials were all near the waist and associated with trade or shell beads.

A disintegrated bird bone awl, 4 inches long, was recovered with Burial 40.

Animal teeth, especially those of the elk, were common. Most of them were drilled at the roots for suspension. Burial 20 had an unusually fine set of elk teeth that had formed a necklace. Every tooth had been polished and several were stained green from contact with brass.

W. B. BURIAL SITES

PLATE 87



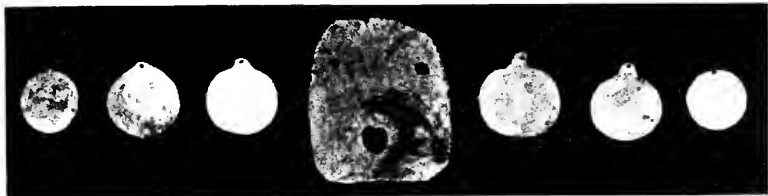
BELT OR GIRDLE MADE OF ROLLED STRIPS OF BUCKSKIN HELD TOGETHER
WITH BRASS STRIPS

TRADE ARTICLES—Among the trade objects recorded were many made of brass. They included the usual jew's-harps and jinglers, both of corrugated brass and plain—several containing bits of preserved leather. Hawk bells in various sizes were common, and many flat pieces of folded brass had preserved bits of leather and fragments of thongs which at one time had formed girdles and parts of necklaces (pl. 87). Arm bands or bracelets made of corrugated brass and containing fragments of human bone were also common.

The most interesting brass objects were the pendants of which many sizes and shapes, perforated for suspension, were found. One complete necklace with a large pendant representing a human face was of unusual interest. It had been buried against a piece of beaver hair which it had preserved (pl. 88).

W. B. BURIAL SITE

PLATE 88



NECKLACE MADE OF SHEET BRASS. THE PENDANT PROBABLY REPRESENTS
A HUMAN FACE

OBJECTS PRESERVED BY BRASS—One of the most interesting objects preserved by the chromic acid which seeped out of the brass was a small fragment of worked cane, indicating that the Susquehannock were basket makers. A large fragment of a black bear skin and the hair of other undetermined animals were recovered (pl. 85, figs. C, D, E). A large lump of human hair wrapped with leather which had strips of brass on it was perfectly preserved (fig. A). It indicated the style of hairdress among these people as previously described with the combs. Many small pieces of fabric both coarse and fine were recovered. One fragment of a shell wampum belt stained green and preserved by brass was with Burial 10.

WOOD—Several parts of wooden bowls and two wooden spoons were recorded in the brass kettles—one fragmentary and one complete. The spoons were typically Iroquoian and the one represented in (pl. 37, fig. A) was an unusually fine specimen of a type still being used by Iroquoian peoples.

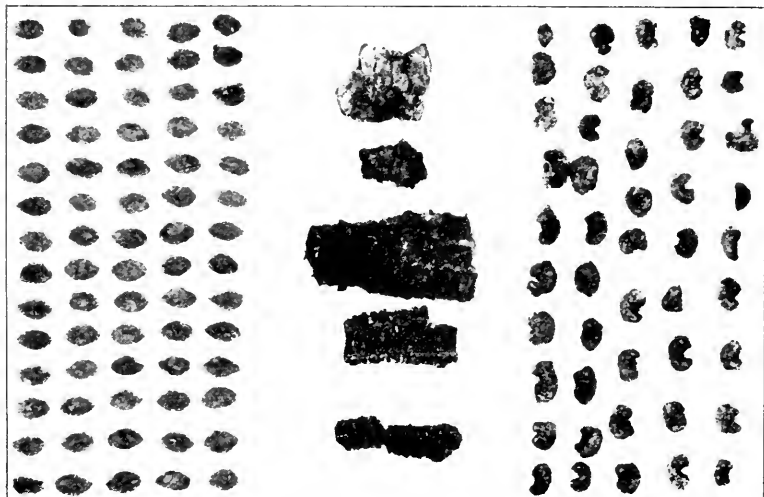
BARK—Many large fragments of bark, used to line the graves, were recorded, and a leaf had been perfectly preserved in the bottom of a small brass kettle.

SEEDS—Seeds of several varieties together with corncobs had been preserved and stained green by brass. According to

Mr. G. N. Collins of the United States Department of Agriculture, Washington, D. C., these were zia-maize, pumpkin, squash and beans (pl. 89).

W. B. BURIAL SITE

PLATE 89



SEEDS AND CORNCOBS PRESERVED IN COPPER KETTLES

Left, pumpkin. Center, corncobs. Right, zia-maize

IRON—Iron objects were not as plentiful on this site as on the Strickler farm. Axes predominated and several different types and sizes were represented (pl. 90). The most interesting of the iron objects was a series of pike ends (fig. E) and a crude gaff hook (fig. F).

BEADS—It would take a separate volume to describe all the beads recovered on the Washington Borough burial site. Thousands of them in many sizes, types and colors were represented in the collection. A number of them are already described in Mr. William Orchard's excellent book "Beadwork of the American Indians." (26).

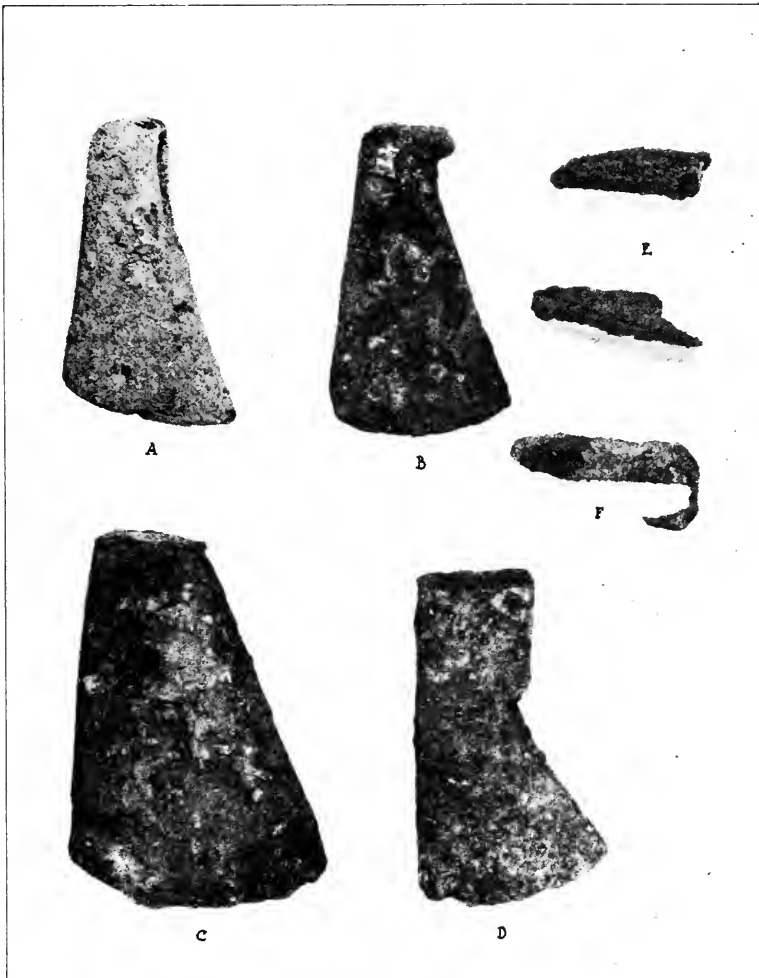
The beads of particular interest were of shell and ranged from a tubular type one inch long to discoidals of all sizes, down to small seed forms not much larger than a pin head. A flattened, round bead in graded sizes seemed to be the favorite. These were found with fragments of large perforated shell pendants.

Mr. Arthur Woodward, curator of the Los Angeles Museum, Los Angeles, California, is an authority on early Indian trade goods. He has studied glass beads extensively and after examining those from Washington Borough submitted the following report:

"I notice in 44 W. B. two distinct types of beads, one the brick red with the translucent green interior is a form of the

W. B. BURIAL SITE

PLATE 90



OBJECTS OF IRON

Figures A, B, C, and D are axes. Figures E, and F, probably pike ends and a gaff-hook

'Cornaline d'Aleppo' bead which continued in vogue in different forms from the earliest times to the present. However, I believe, after comparing some of the later late 18th and early 19th century beads, found in graves in California, that the forms changed somewhat from the cylindrical to the more spheroid shape. The outer covering of these beads is generally red but the interior core changes from green to opaque white and lemon yellow. Likewise in the latter beads, the outer red covering changes from the dull brick red to a more cheerful, crimson and generally translucent, save in some instances when the original combination of colors have been preserved. I have some of the later 'Cornaline d'Aleppo' beads found in an Indian cemetery near Chico, California. Included in the lot however are some of the same color as that found at 44 W. B. but the shape is different.

"The white bead, from 44 W. B. the short opaque cylinder, in my estimation is one of the imitation wampum beads of the middle 17th century. These type beads began to crop out in New Netherland and continued in vogue for many years. As early as 1650 the Dutch passed laws prohibiting the use of these imitation wampum beads in wampum strings among the inhabitants of New Amsterdam.

"The tubular white and blue beads from No. 29 W. B. are likewise this imitation wampum, so is the same type bead in 10 W. B. I rather imagine, judging from the Dutch regulations that these beads came into being about 1640-1650 and were introduced as a hope of certain of the traders to supplant the real shell wampum, save the expense of manufacture, stringing, etc., and thereby create a greater profit. The use of this type bead was forbidden however in an edict of 1650 by Director Peter Stuyvesant and his council, but I have no doubt the same beads went out into the hinterland as trade objects and were used as ornaments by certain of the tribesmen who made them into strings, bracelets, head bands, belts, etc., and wore them as ornaments, saving their regular shell wampum for more serious business. Naturally this type of bead had to conform to the general standards of thickness and length of the genuine stuff, that is $1/8$ to $3/16$ in. in diameter and $1/8$ to $7/16$ in. in length. These glass beads check in $1/8$ in. in diameter and about $1/2$ in. in length and ranging in between. They would pass in a string of wampum unless a practised eye detected the

deceit. The white beads especially might pass; the blue ones would be caught.

"The polychrome bead in 27 W. B. known as the 'star' or 'chevron beads' seem to be old. According to Orchard these were made at Murano, a suburb of Venice from very early times. Schoolcraft also pictures these beads, considerably enlarged and it would seem that they also had been passed out by French traders. The French operated in the western area earlier than the English and were in contact with the tribes of the Ohio river region earlier than the English. They have been made in recent years and exported to the Congo, they range from the tiny ones to two inches.

"One blue bead from 39 W. B. and another from 28 same site, show evidences of iridescence brought about by long immersion in the soil. The same iridescence is found also on old Roman glass taken from the tombs. This coloration is due to a breakdown of the chemical elements of the glass and is not artificial in the sense of having been deliberately colored in that manner. Another bead of the same type and color as those found in 39, 28 and 69 W. B. does not bear this iridescent coloring. Therefore, it would seem that either Burials 28 and 39 are older than 69 or that the condition of the soil in that particular section of the ground differed from the remainder of the earth in that area. I imagine Burial 69 was a trifle later, or that the beads having been handed down were not buried during the same generation."

Mr. William C. Orchard after examining Washington Borough beads submitted the following report:

"The Chevron (sometimes called the star) bead was manufactured at an early date at Murano, near Venice, for trade through northern Africa and western Asia. Among other types of beads in your W. B. collection this was brought to the southwest by the Spaniards about 1540. Several specimens were found in ruins of Hawikuh, N. M. It has also been found in numerous parts of the United States and Canada, particularly in the east where some much larger specimens have come to light, ranging up to two inches in length. Parts of the blue surfaces of many of these found in the east, have been ground off, exposing the red central core and edges of the intermediate layers, giving the beads an entirely different appearance (see page 84, Pl. XII of Beads and Beadwork of the Amer-

ican Indians). Several of this type are on your strings from Washington Borough.

The flat circular beads, red in color, with blue and white stripes are an uncommon type which are said to have been made by the people at Murano. The discoidal beads of shell and the small tubular shell beads are common, as you know, to the United States. There are two shell disc beads that are stained black possibly from animal matter or charring near a fire. The large globular black beads with stripes on them are Venetian beads of the seventeenth century. The light blue globular glass beads and the small varicolored beads are Venetian beads of early date.

"The tubular glass beads commonly called bugle beads, came to the United States much later than the spherical type, probably about the time that the importance of wampum was recognized. There are some from W. B., that is the white ones, which may have been made in imitation of wampum.

"The small metal tubular beads were made of sheet brass by the natives, perhaps from a piece of a brass kettle."

The trade goods sold to the Susquehannock were obtained from various sources but the Dutch, English and French probably supplied most of the traders. The bulk of the trade material was made by these nations in the 17th century and well into the 18th. Beads came principally from one source, Venice, with later French cut beads and still later Bohemia, now Czechoslovakia up to today. French traders used smuggled English goods because they were better and cheaper than French products. England sub-let trade contracts to the continent during certain periods so that a general mixup of trade goods ensued; however, most of them can be traced to common sources by experts.

SUMMARY AND CONCLUSIONS

The chief value of archaeological excavations on an Indian site of the Washington Borough type is to obtain detailed comparative material which may shed light on the origin and possible migratory route of its occupants. If the part of the site devastated by vandals had been examined by competent observers, considerable additional data bearing upon the customs,

religion and history of the group who lived there, might have been gathered.

It is well known that groups of Carantouans from the Susquehanna were colonized by the Five Nations. Archaeological work in the Cayuga territory of New York State verified this more than twelve years ago by pottery forms (25).

Of the other aboriginal utensils and implements of the Washington Borough site, outside of pottery, we can say only that with few exceptions they differ little from what we might expect to find on a large proportion of Iroquois sites of early and late colonial period. The objects recovered had certain tribal and regional features that can be used in establishing authentic Susquehannock criteria.

The artifacts found on the Washington Borough site, outside of the trade objects, were of Iroquoian manufacture. Accepting the site as typical Susquehannock we have a fair cultural horizon for a late prehistoric period leading into an early white contact. The fact that the site was older than the Strickler Site was established by the more archaic and delicate ceramics. Less trade material was found and a few of the burials were pre-contact.

The mortuary customs at Washington Borough were similar to those of the Strickler Site but the separate excavation beside the grave for containing offerings was missing. This indicates that this custom may have been practiced only after long white contact.

There was a paucity of many objects such as pipes, maskettes, runtees, etc., usually associated with sites of this period. However, as only a very small part of the original cemetery was excavated, these objects may have been destroyed by the vandals.

Very little northern influence was noted and the southern influence suggested Cherokee more than Algonkian, especially in the pipes. The unusually large vessel was similar to several found on the prehistoric village site nearby.

The predominant material culture was, roughly speaking, clay emphasized by the unusual number of vessels recovered.

The forms of the arrowheads were Iroquoian and more like Cherokee than those found in the north. We believe the site was occupied between the latter part of the 16th century up to about 1640.

THEORIES

Basing our theories on the general belief that there was an Iroquoian migration from the Middle Mississippi Valley between the 10th and 16th centuries, we can proceed to picture the Susquehannock migrating with the main body up through the Ohio Valley. After spending some time in what is now western Pennsylvania they moved eastward up the Youghiogheny River through the Pennsylvania mountains and then down through the Potomac Valley and across to Chesapeake Bay. Being essentially an inland, fresh water people, they moved up the largest convenient river, the Susquehanna, and established themselves in the rich fertile country we know now as Lancaster and York counties. Before doing this, however, they had to drive the Algonkian occupants out of the region. It may have been the Lenape who were forced eastward and again it might have been other groups who were exterminated.

The Susquehanna Iroquois culture must have been effected to a certain extent by Algonkian contact and conquest. It is surprising, however, to observe by a comparative study how well they held on to their material culture and customs, regardless of their isolation from large groups of their own people. They had been separated from the main bodies of Iroquois so long that upon contact through the Andastes, with the Five Nations on the upper Susquehanna River, mutual interests of blood kin had been lost. Both groups, naturally aggressive, soon conflicted, and once kindled the fire burned until the Carantouan were exterminated.

WASHINGTON BOROUGH VILLAGE SITE

Chart 6

The village site in Washington Borough explored by the expedition was N. 65° E (magnetic) 1336 ft. from the S. stake (El. 256.4) of the burial site on the same side of Staman's Creek at El. 271.1. The property belonged to Mr. Heast Frey who very kindly gave his permission to excavate after a tobacco crop had been removed.

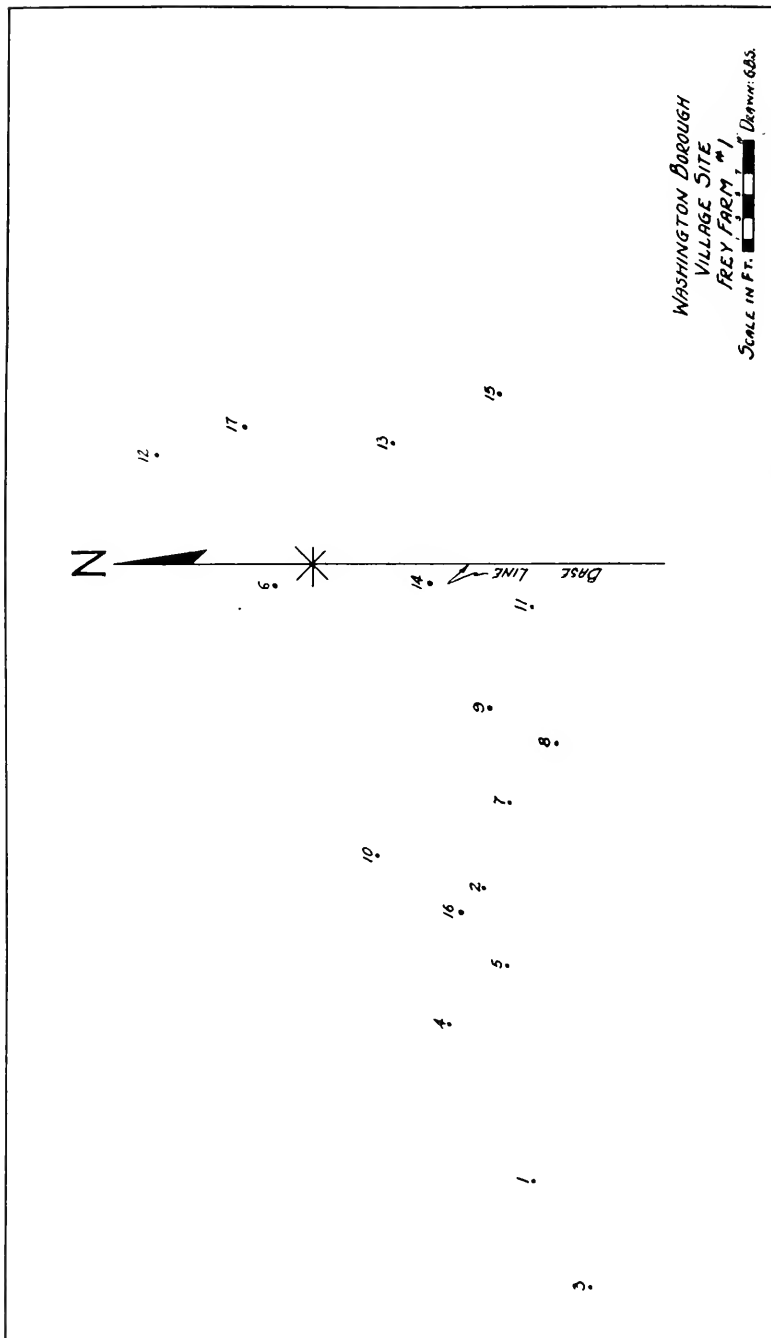
Near an old log house, known locally as the trading post, seventeen large pits were excavated and recorded. All these pits were more or less round averaging between 2 ft. 6 in. and 4 ft. 9 in. in diameter. Four were between 2 ft. and 3 ft. 3 in. in depth; eight, between 4 ft. and 4 ft. 11 in.; and the balance between 5 ft. and 5 ft. 7 in. deep. The walls of the pits were straight and the bottoms averaged about the same size as the tops except in 6-7-13-14 where they were 2 to 6 in. smaller.

The pits were primarily for storage with secondary use as fireplaces. A brief description of a few of them is all we can present here. Their contents were similar except those which contained a limited amount of fragmentary brass and iron.

PIT No. 1—From the ground level to a depth of 7 in. humus mixed with shell was encountered; below this, 6 to 8 in. thick, was a hard packed layer of mussel shells; and to the bottom charcoal and ashes. Resting on the hardpan were three pieces of the shell of a box tortoise.

PIT No. 2—From the surface to a depth of 8 in. was the usual humus, below to the 2 ft. 4 in. level was charcoal and humus, a 2 in. layer of wood ash and then charcoal and mixed earth to bottom 5 ft. 4 in. down. At 1 ft. from the surface, a hammerstone was recorded and in the ash layer another. Near the bottom were three bone awls and a small fragment of brass.

PIT No. 3—This pit was covered by 8 in. of top soil underneath which mixed earth and charcoal was found to the 2 ft. level. A bed of wood ashes averaging 9 in. in thickness was below, and mixed charcoal, earth and mussel shells containing scattered animal bone, fragmentary pieces of pottery and bits of brass were recorded to the hardpan 5 ft. from the surface. The walls of the pit were fire burned to a pinkish color above the ash layer.



PIT No. 6—Below the surface soil this pit contained mixed earth and charcoal to the bottom, 2 ft. 8 in. down. At the 9 in. level ten waterworn white quartz stones were found in a pile, and scattered below were fragments of animal, bird bones and pottery. On the southwest side, the wall had an offset which was 2 ft. 4 in. in diameter and 2 ft. deep. This contained mixed earth, charcoal, animal bone, one fortuitous bone awl and a few fragments of pottery.

PIT No. 14—From the surface to the 2 ft. level mixed soil and charcoal was recorded, below was a 4 in. layer of wood ash and mixed earth containing charcoal to the bottom 3 ft. 8 in. down. Pottery fragments were scattered from the surface to the hardpan. One small piece of hematite was in the ashes, and a large piece of prepared pottery clay containing pounded shell rested on the bottom on the southwest side.

MIDDEN—The kitchen midden or refuse dump of this site was N. 115° 460 ft. from the south stake of the village site. It covered a considerable area and averaged 4 ft. in depth over the edge of the knoll and thinned to 8 in. at the top. It contained, at various levels, innumerable objects of bone, antler, stone earthenware and shell. It was contemporaneous with the precontact pits recorded.

ARTIFACTS

POTTERY—Most of the pottery vessel forms on the Washington Borough village site were similar to those found on the burial site. An assortment of sherds and restored vessels from each pit was selected for comparative examination and an interesting discovery was made about the mortuary customs of the Susquehannock. With the exception of what at the time was considered an unusually large vessel with B. 43, most of the pots recovered on the burial site were comparatively small. On the village site, both in the pits and refuse, the vessels were between 9 in. and 16 in. in diameter at the mouth, and 14 in. to 22 in. in depth, averaging from two to five times the size of the usual burial pots. There is no question but that the village site was contemporaneous with at least part of the burial site, and that large vessels were seldom buried with the dead. An archaeological exploration of the burial site alone would lead an investigator to believe large vessels were not used to a great extent by the Susquehannock.

W. B. VILLAGE SITE

PLATE 91



LARGE POTTERY VESSEL FROM THE WASHINGTON BOROUGH VILLAGE SITE.
SIZE CAN BE DETERMINED FROM THE PENNY AT THE LEFT

The ware on the large vessels was between 3/8 and 1/4 in. in thickness and tempered with shell. The collar designs noted were half round, grooved lines, elliptic indentations, punctate and occasional incised lines. Because of the difference in size, designs on the large vessels were bolder, and the human faces and notches larger than on the smaller vessels recovered on the burial site (pl. 91).

LABORATORY STUDY OF SHERDS

The following is a laboratory study made of a few sherds from this site by Mr. James Griffin at the Ceramic Repository for the Eastern United States, Ann Arbor, Michigan:

Classification

No. 5795-1

Paste:

Temper
Texture
Hardness
Color

Shell
Medium fine
2 to 2.5
Light brownish grey exterior—slightly smoke blackened interior over a grey.

Surface Finish:

Tooled with a cord-wrapped paddle and subsequently smoothed.

Decoration: technique design

Face formed by adding small piece of clay. A series of r. to l. slanting, closely spaced incised lines just below lip. Then 6 med. wide and shallow, horizontal incised lines around rim. Then another series of short closely-spaced lines as above. Then a series of l. to r. slanting, longer, med. wide, shallow lines with a slant to end of rim.

Form: rim lip body thickness

Straight and high—raised over face
Narrowed and rounded—notched over face
?
Lip .5 cm; rim .7 cm; shoulder .5 cm.

Classification

No. 5795-3

Paste:

Temper
Texture
Hardness
Color

Shell
Shell
Medium fine
2 to 2.5
Dark grey—smoke colored interior

Surface Finish:

Smoothed

<i>Decoration:</i> technique design	Triangular face, added piece of clay. Narrow shallow, r. to l., closely spaced, incised lines just below lip. Then a series of 11 med. wide and med. deep horizontal incised lines which reach to bottom of rim. Lower part of rim has widely spaced, very deep, wide, 2.5 cm. long gashes. This has produced a very noticeable cameo on the interior.
<i>Form:</i> rim lip body thickness	Slightly convex outwards. Raised above face Flattened and rounded. Notched above face Lip .5 cm; rim .5 cm; shoulder .5 cm.
Classification No. 5795-4	
<i>Paste:</i> Temper Texture Hardness Color	Shell Medium fine to fine 2.5 Smoke blackened interior—smoke discolored exterior Smoothed
<i>Surface Finish:</i>	
<i>Decoration:</i> technique design	Triangular face. Line of r. to l. slanting, narrow, shallow, closely spaced lines. Then 5 med. wide, shallow, horizontal lines. Then another series of short, closely spaced, but med. wide and med. deep, r. to l. slanting lines. Below this to the edge of rim is a series of ever enlarging triangles with open base and point downward.
<i>Form:</i> rim lip body thickness	Slightly convex outward—raised over face Flattened and rounded—notched over face Very short neck forming collar Lip .5 cm.; rim .5 cm; shoulder .3 cm.
Classification No. 5795-17	
<i>Paste:</i> Temper Texture Hardness Color	Shell Medium fine 2 to 2.5 Smoke blackened interior—partially on the exterior—otherwise a very light brown.
<i>Surface Finish:</i>	Smoothed over cord-wrapped tooling
<i>Decoration:</i> technique design	A series of r. to l. slanting, slightly curved, narrow and shallow incised lines. Then 2 med. wide, shallow, horizontal lines. A series of 11 med. wide, very shallow, perpendicular lines. A series of l. to r. slanting lines from the corner of the perpendicular and horizontal lines to the corner of the rim and the next series of perpendicular lines. The intervening space is filled with r. to l. slanting incisions that look like thumbnail marks. At base of rim are triangular impressions.

<i>Form:</i> rim	Straight—high—suggestion of collar
lip	Narrow rounded
body	?
thickness	Lip .4 cm.; rim .65 cm.; upper body .4 cm.
Classification	
No. 5795-18	
<i>Paste:</i>	
Temper	Shell
Texture	Medium fine
Hardness	2 to 2.5
Color	Light brown or sand color—smoke blackened interior
<i>Surface Finish:</i>	Smoothed over cord wrapped paddle markings
<i>Decoration:</i> technique	Med. wide shallow, closely spaced, r. to l. slanting lines that end at base of rim.
design	Rim edge is notched with narrow shallow, closely spaced notches.
<i>Form:</i> rim	Straight—suggestion of collar
lip	?
body	?
thickness	Rim .3 cm.; body .45 cm.
Classification	
No. 5795-3	
<i>Paste:</i>	
Temper	Shell—considerably hole tempered
Texture	Medium fine
Hardness	2 to 2.5 almost 2. The softest sherds of the group light brown
Color	
<i>Surface Finish:</i>	Smoothed—considerably weathered
<i>Decoration:</i> technique	Incised lines
design	
<i>Form:</i> rim	?
lip	?
body	?
thickness	.6 to .8 cm.
Classification	
No. 5795-8	
<i>Paste:</i>	
Temper	Shell
Texture	Medium fine
Hardness	2.5
Color	Light brownish grey
<i>Surface Finish:</i>	Smoothed
<i>Decoration:</i> technique	The r. to l. slanting lines are deeper and wider at the slightly everted lip area. Then a series of fine med. wide, shallow, horizontal lines. A slightly impressed band below this has the r. to l. lines. Then a series of 7 horizontal lines similar to the first group. Series of widely spaced, med. wide and deep perpendicular grooves cross the last horizontal line. The middle impressed band and the grooves leave a cameo on the interior.
design	

<i>Form:</i> rim	Straight—high
lip	Flattened and rounded; thickened on exterior edge
body	? slight neck
thickness	lip .55 cm.; rim .5 cm; neck .2 cm.

Classification
No. 5795-29

<i>Paste:</i>	Grit—very few pieces
Temper	Fine
Texture	2 to 2.5
Hardness	Very faint brickish red
Color	

Surface Finish: Roughly smoothed

Decoration: technique
design

<i>Form:</i> rim	Straight
lip	narrowed and rounded
body	?
thickness	Lip .5 cm; body 1 cm.

Classification
No. 5795-5

<i>Paste:</i>	Shell
Temper	Medium fine
Texture	2.5 to 3
Hardness	Smoke blackened interior and exterior
Color	

Surface Finish: Tooled with cord-wrapped paddle and subsequently smoothed.

Decoration: technique
design

Narrow, shallow r. to l. slanting lines just below lip. Then a group of 8 horizontal, med. wide and med. deep lines. Then in a depressed band is another series of r. to l. slanting lines as above. Below this another series of horizontal lines. Crossing this last group, at wide intervals is a wide, deep, perpendicular gash. The depressed band and the gash form cameos on the interior.

<i>Form:</i> rim	Straight—high
lip	Flattened and rounded—cord-marked
body	?
thickness	Lip .55 cm.; rim .65 cm.

Classification
No. 5795-6

<i>Paste:</i>	Shell—occasional pieces of grit (quartz)
Temper	Medium fine
Texture	2 to 2.5
Hardness	Light brown exterior
Color	

<i>Surface Finish:</i>	Rim smoothed. Some tooling marks on body.
<i>Decoration:</i> technique design	Very short, r. to l. lines at lip—narrow and shallow. 2 med. wide, shallow horizontal lines. Most of rim has a series of med. wide, shallow perpendicular lines flanked by a series of similar but l. to r. slanting lines. At base of rim is another series of slanting lines similar to those below lip. Also some of this type on rim below the l. to r. slanting lines.
<i>Form:</i> rim lip body thickness	Straight—one part raised Narrowed and rounded ? Lip .3 cm.; rim .5 cm.; shoulder .4 cm.
Classification No. 5795-10	
<i>Paste:</i> Temper Texture Hardness Color	Shell Medium fine 2.5 Smoke discolored grey
<i>Surface Finish:</i>	Smoothed
<i>Decoration:</i> technique design	Just below lip the narrow, shallow, r. to l. closely spaced diagonal lines. Then three med. wide and med. deep horizontal encircling lines. Below that series are l. to r. slanting narrow, shallow, quite closely spaced incised lines.
<i>Form:</i> rim lip body thickness	Straight—but slightly everted at lip Rounded ? Lip .6 cm.; rim .5 cm.
Classification No. 5795-11	
<i>Paste:</i> Temper Texture Hardness Color	Shell Medium fine Heavily smoke blackened interior—partially on the exterior—otherwise chocolate grey.
<i>Surface Finish:</i>	Smoothed over cord-wrapped paddling
<i>Decoration:</i> technique design	A series of closely spaced r. to l. slanting, short incised lines, med. wide and med. deep, at the upper part they quickly become narrow and shallow. A series of 15 med. wide, shallow, horizontal lines are terminated by a group of 9 (visible) med. wide, deeply impressed, perpendicular lines. In the angle between these two sets of lines is a group of med. wide, shallow, imprints that appear as though they had been stamped.

Form: rim	Straight
lip	Flattened and rounded
body	?
thickness	Lip .45 cm.; rim .55 cm.

Classification
No. 5795-13

Paste:	Shell
Temper	Med. fine
Texture	2 to 2.5
Hardness	Tan or light brown exterior
Color	

Surface Finish: Smoothed over cord-wrapped tooling

Decoration: technique design Just below lip are remnants of r. to l. slanting lines which have been smoothed over. Then 2 med. wide, shallow, crudely incised, horizontal lines. Then a group of horizontal, or slightly diagonal, med. wide to narrow, shallow lines. These are terminated by a series of narrow, med. deep perpendicular lines. The workmanship on this vessel is none too good.

Form: rim	Straight high
lip	Rounded—slightly flattened very slightly everted
body	?
thickness	Lip .4 cm., rim .6 cm.

Classification
No. 5795-14

Paste:	Shell
Temper	Medium fine
Texture	2.5
Hardness	Smoke blackened interior
Color	

Surface Finish: Smoothed

Decoration: technique design A series of med. wide, shallow horizontal lines is terminated by a series of 8 r. to l. slanting narrow, shallow lines. This group is terminated by a perpendicular series of shallow, narrow lines.

Form: rim	Straight—high—suggestion of collar
lip	Flattened and rounded
body	?
thickness	Lip .6 cm.; rim .6 cm.; shoulder .35 cm.

Classification
No. 5795-16

Paste:	Shell
Temper	Medium fine to fine
Texture	2 to 2.5
Hardness	Light brownish grey—smoke blackened upper interior
Color	

<i>Surface Finish:</i>	Tooled with a cord-wrapped paddle and subsequently smoothed
<i>Decoration: technique design</i>	Upper portion of rim is broken. A series of short, perpendicular med. wide and med. deep incised lines reach to end of rim. This group of 26 lines is terminated by a group of diagonal, l. to r. slanting med. wide, deeply incised lines.
<i>Form: rim</i>	Straight—collared
lip	?
body	Globular bottom, short neck
thickness	Rim .6 cm.; shoulder .3 cm.; body .5 cm.
Classification No. 5795-22	
<i>Paste:</i>	
Temper	Shell
Texture	Medium fine
Hardness	2 to 2.5
Color	Light brickish red
<i>Surface Finish:</i>	Smoothed
<i>Decoration: technique design</i>	6.5 horizontal lines, med. wide to narrow and med. deep. At base of overhanging rim are deeply incised, wide gashes which set apart knobs of clay.
<i>Form: rim</i>	Straight—collared
lip	narrowed and rounded
body	?
thickness	Lip .35 cm.; base of rim 1.1 cm.

BONE AND ANTLER OBJECTS

In addition to the beautifully carved combs, already described, the refuse and pits on this site produced many utilitarian bone objects of interest—among these were several types of bone awls. The fortuitous splinter type predominated and twenty-nine specimens were recovered (pl. 92, fig. C). Next in number were smoothly finished awls ranging between 5 in. and 8 in. in length (figs. A, E). Several awls with the natural joints as handles were also recovered (fig. D), together with three unusual types made from heavy bone (figs. F, G, H). Four delicately pointed bird bone awls (figs. I, J, K), and innumerable types in process of construction were recorded.

WORKED PHALANGEAL BONES—A number of worked phalangeal bones of deer were noted in the pits (pl. 92, fig. L). These are not unusual on Iroquois sites and were used either as jinglers or as units in the cup and pin game in which several

CERAMIC REPOSITORY REPORT

	Tempering		2-2.5	Hardness		Rim Shape	Surface Finish		P.&S.	Texture		Shape Lip		F&R		Smoke Blackening	
	Grit	Shell		2.5	2.5-3		S.	P.		F. MF	R. N&R					Int.	Ext.
5798-1		x		x		Straight	x		x	x						0	0
2		x		x			x			x						x	0
3		x		x			x			x						x	⊕
4		x		x			x			x						⊕	0
5797-1		x		x						x						⊕	0
2		x	x	x			x			x						⊕	0
5796-1		x					x			x						⊕	0
5795-1		x					x			x						⊕	0
3		x					x			x						⊕	0
4		x					x			x						x	⊕
5		x					x			x						x	⊕
6		x					x			x						x	⊕
8		x	x	x			x			x						⊕	0
10		x		x			x			x						⊕	0
11		x		x			x			x						⊕	0
13		x	x				x			x						x	⊕
14		x					x			x						x	⊕
16		x		x			x			x						x	⊕
17		x														x	⊕
18		x								x						x	⊕
19		x								x						x	⊕
22		x								x						x	⊕
23		x								x						x	⊕
21		x								x						x	⊕
26		x								x						x	⊕
28		x								x						x	⊕
29	x?	x	x				x			x						⊕	0

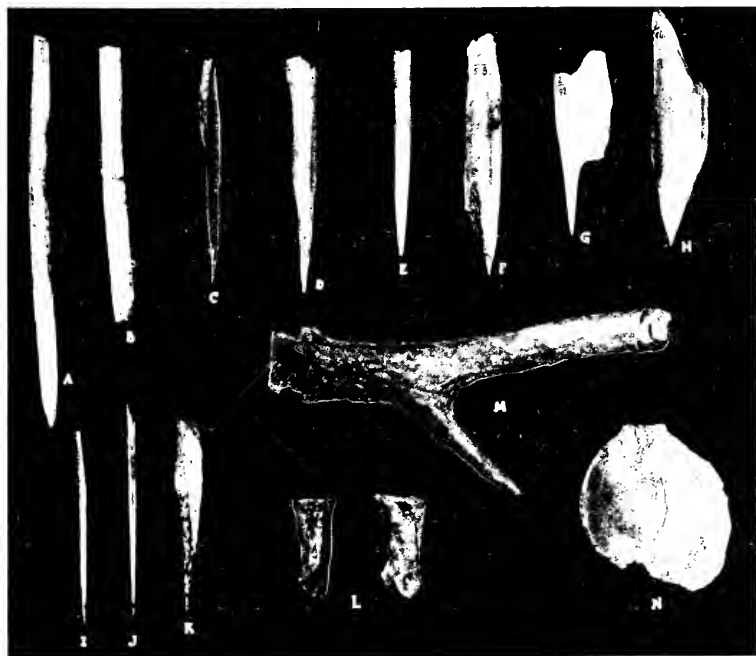
P.—paddled
 S.—smoothed
 P&S—paddled and smoothed
 F.—fine
 MF—medium fine
 R.—rounded
 N&R—narrow and rounded
 F&R—flat and rounded
 Int.—interior
 Ext.—exterior
 Hardness—geological scale
 O—absent
 x—present
 ⊕—partially blackened

were drilled lengthwise and hollowed on the proximal end, were strung together, tossed into the air and an attempt made to catch the hollowed part on a bone pin. A careful count was kept and the winner announced after a certain number had tried to catch the bones. (See Games) (27).

Several pieces of partially worked fragments of both bone and antler, showing the use of native cutting tools, were recorded (pl. 92, fig. M).

W. B. VILLAGE SITE

PLATE 92



OBJECTS OF BONE AND ANTLER FROM PITS AND MIDDENS ON THE VILLAGE SITE

ANTLER—The fact that the Susquehannock used antler projectile points was well established on this village site as several arrowheads in situ were recorded. They averaged between $1\frac{1}{4}$ in. and $2\frac{1}{2}$ in. in length and were beautifully smoothed and pointed. At the proximal end they had one notched and pointed tang and were hollowed out conically so the shaft of the arrow could be inserted (pl. 93, figs. A, C, D).

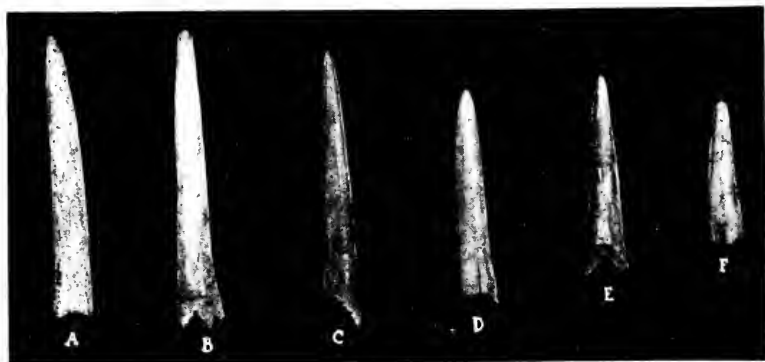
Three "bunt" arrowheads, made of antler, were found (pl. 93, figs. B, D, F). They had two, four and six short pointed

projections on the distal end, pointed on proximal end, and were probably stunning arrows for taking small game, or the property of children learning to use weapons. This type of antler point is still employed by Indians in the sub-Arctic.

ANIMAL TEETH—Canine teeth of bears were plentiful on the site and may have been used for decoration. Beaver incisors were common and several showed signs of use as implements, probably gouges.

W. B. VILLAGE SITE

PLATE 93



ARROWPOINTS MADE OF ANTLER

PIPES—Fragmentary pieces of smoking pipes had apparently been tossed into the pits and refuse dumps by their owners. Twenty-three stems and five broken bowls were found and all were Iroquoian types. The most interesting was a large bowl with four human faces molded on the outside of the rim so that two faced the smoker and two forward (pl. 32, fig. B).

One very fine finished antler pipe and two in preparation showed a use of this material for smoking pipes as a custom hitherto unrecorded on Iroquoian sites (pl. 94).

PAINTS—Pigments similar to those found on the burial site were recorded—black, red and white colors were noted.

STONE OBJECTS

ARROWPOINTS—Only triangular arrowpoints made of white quartz were recorded in the pits and refuse (pl. 95, figs. D, E, F).

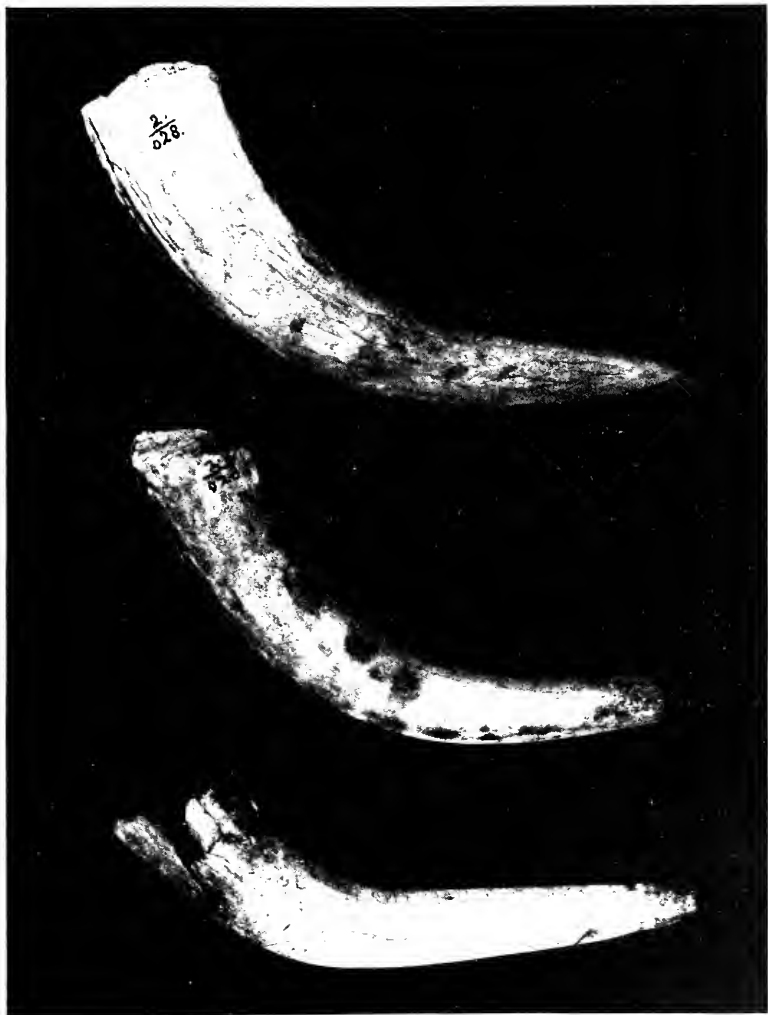
SCRAPERS—Scrapers made of white quartz and probably used for cleaning hides or roughing out wood were plentiful

on the site. They were larger than the average Iroquoian implement of this type and crudely made (pl. 95, figs. A, B, C).

NET SINKERS—Fourteen net sinkers of varying sizes were found. They were the usual flat stones notched on two sides. It is possible that these objects were also used, attached to thongs, as bolas stones for taking birds (pl. 96).

W. B. VILLAGE SITE

PLATE 94

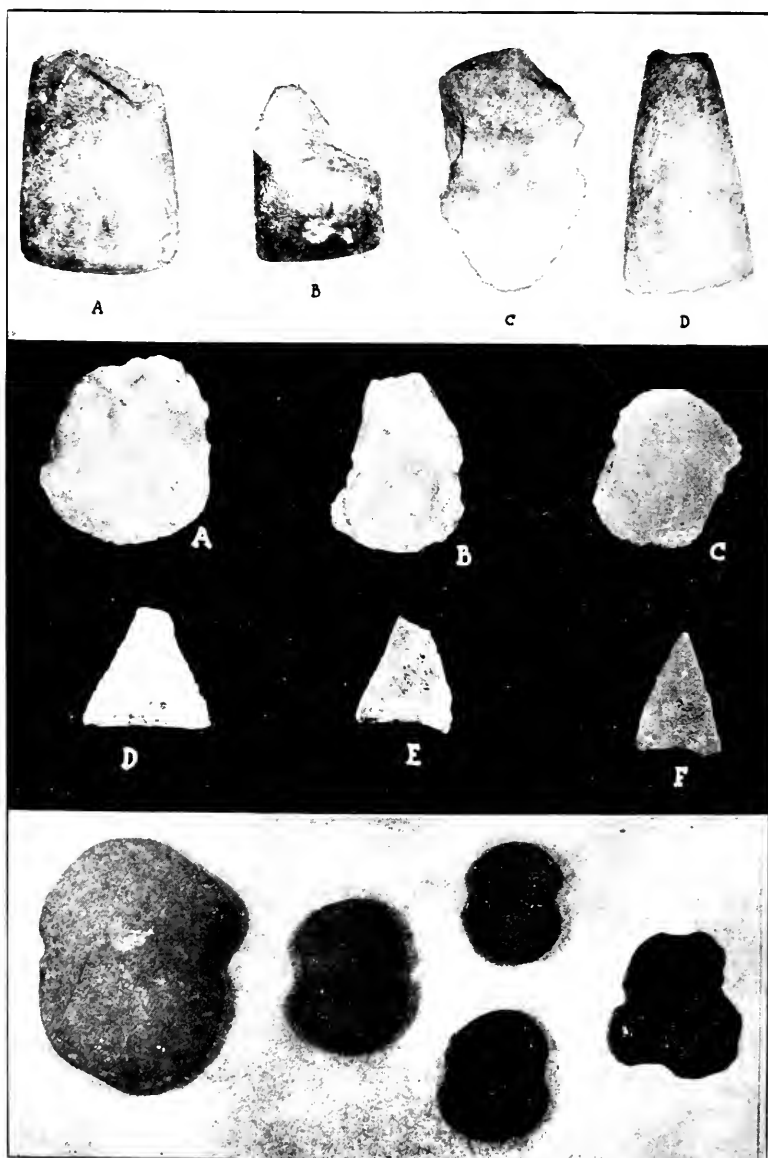


SMOKING PIPES MADE OF ANTLER

The two upper figures are unfinished and the lower smoothed and polished with a deep charred orifice

W. B. VILLAGE SITE

PLATES (DOWN) 97, 95 AND 96



OBJECTS MADE OF STONE

Plate 97 represents axes both grooved and celt forms. Plate 95 arrow-points and scrapers made of white quartz. Plate 96 notched stones used as sinkers or bolas

"POT COVERS"—Nine so-called "stone pot covers" made of thin slate were of unusual interest. They varied in size from 1½ in. to 4 in. in diameter and were round and notched on opposite sides. These objects are still in the problematical class and are called "covers" because Mr. Alanson Skinner recorded one in a grave near Athens, Pennsylvania, "set over the mouth of a pottery jar." (p. 104) (25). The large specimens may have been used for "covers" but the very small ones found on this site would not be practical for this purpose and their use is unknown.

HAMMERSTONES—Several pitted hammerstones in various sizes were noted. A few had pits on both sides and others only one. Four showed chipping at the edges and may have had a secondary use in a game as they resemble the discoidal stones used for this purpose by the prehistoric Cherokee (see Chunky Frey Site).

AXES AND CELTS—Three fragmentary celts were recorded on this site indicating these implements were still being used by the Susquehannock of the period. They were the usual flat type popular among most Iroquois groups, rectangular in shape and with elliptical section (pl. 97, fig. A, C, D). The material used in their construction was a hard, fine grained stone. One small fragment of a grooved axe suggested that this type of cutting implements was also being utilized (fig. B).

MISCELLANEOUS STONE OBJECTS—A half of a winged bannerstone, a small round perforated bead and a smoothly polished pendant made up the balance of stone artifacts from the village site. The bannerstone fragment was intrusive and the stone beads may have been, as they are rare on Iroquoian sites. The pendant was 2 in. long, 1½ in. wide, rounded on the edges and polished. It was drilled on one end and from the side, the two holes met 1½ in. from the end and formed a V through which a cord was probably passed with which it was suspended.

TRADE OBJECTS—Eight fragmentary sections of sheet brass from the pits revealed that some contact had been established with white men while this site was occupied. Two slender iron awls were also recovered,

SUMMARY AND CONCLUSIONS

On this village site the aboriginal artifacts outnumbered the contact objects by more than 100 to 1. Implements made of stone were more numerous than on the late historic sites. The art of bone working with native tools was emphasized, and at the period of occupation the Susquehannock had reached the height of their artistic ability in ceramics. The large pottery vessels were masterpieces of the potter's art and indicated a long sedentary occupation.

The pits and refuse dump explored by the expedition were only a very small part of the enormous village that at one time existed here. A thorough archaeological exploration of the area between the Strickler farm and Washington Borough would probably reveal many village sites and burying grounds, ranging from prehistoric times well into the historic period.

At the time this part of Conojohla was occupied the Indians apparently did not have a direct white contact. Their material culture was still aboriginal, and a few trade objects recovered indicated the date of the site was late in the 16th century or very early in the 17th.

Three important discoveries were made here. In the order of their importance they are: (1) the use of large pottery vessels with rounded bottoms by prehistoric Iroquois; (2) the development of the bone and antler comb with its elaborate and smoothly finished effigies before steel tools were introduced; (3) the use of antler for monolithic smoking pipes by prehistoric Iroquois.

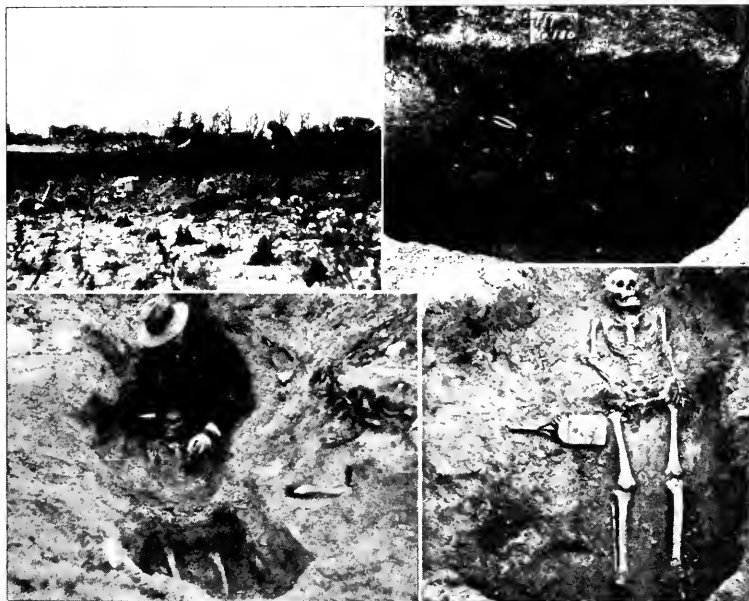
FREY FARM BURIAL SITE

Chart 3

Mr. Heast Frey also owned the property across Staman's Run from the Washington Borough burial site already described (pl. 98). He gave the expedition permission to do a limited amount of excavating on this land and two interesting burials were recorded.

Burial No. 1 was in excellent condition exactly 2 ft. below the surface. It was extended on its back facing up and heading northeast (pl. 99). On the manubrium rested a round shell pendant and ten short tubular shell beads in graduated sizes. From the xiphoid appendage of the sternum to the calcaneum, 480 bone beads, also in graduated sizes, were recorded (pl. 100). The beads apparently formed part of a girdle to which a bone comb was attached. Near the left

FLATES (DOWN) 98, 99 FREY FARM BURIAL SITE PLATES (DOWN) 101, 100



BURIAL SITE ON THE HEAST FREY FARM
BURIAL NO. 1 PARTIALLY UNCOVERED

BELL-SHAPED PIT NO. 130 ON
THE SCHULTZ FARM SITE
BURIAL NO. 1 FREY BURIAL SITE

radius was a small pottery vessel of an unusual type for this area (pl. 73, fig. A).

The friable nature of the bones had caused some damage especially to the vertebrae. They were carefully studied by Mr. William Richie of the Rochester Museum of Arts and Sciences and following is his report on the skull:

Length, max. 17.1

Breadth, max. 14.3

Height, basion-bregma 14.1

Capacity 1310 c.c.

Cranial Module 15.1

Circumference, max. (above supraorbital ridges) 50.1

Nasion-opisthion arc 36.1

Length, total (chin-nasion) 11.2

Length, upper (prosthion nasion) 6.7

Breadth (dia. bizyg., max.) 13.2 (right defective)

Diameter frontal

Nose

Height 4.9

Breadth 2.7

Basion-prosthion line 9.5

Basion-subnasal point 8.5

Basion-nasion 10.0

Prosthion-nasion height 6.7

Prosthion-subnasal point height 2.0

Orbits

Breadth 4.0

Height 3.5

Mandible

Height at symphysis 3.2

Thickness at 2nd left molar 1.5

Diameter bigonial 9.75

Breadth of ramus, min. 2.9

Foramen Magnum

Diameter, mean 3.35

Palate

Length 4.8

Breadth 3.7

INDICES:

Cephalic	83.6	Brachycephalic
Height-length	82.3	Hypsicephalic
Height-breadth	98.5	
Facial, total	84.8	Chamaeprosopic
Facial, upper	50.7	
Orbital	87.5	Mesoseme
Nasal	55.1	Platyrrhine
Facial angle	74°	Orthognathous
Alveolar angle	56°	
Palatal	77.0	

Sutures very simple. Right M_1 and left M_2 lost in life from mandible; M_3 not erupted. No teeth lost in life from upper jaw; M_3 only present. Mild degree of wear.

Burial No. 2 had no artifacts. It was extended on its back with head twisted to the left and facing the proximal end of the left humerus. The carpus, metacarpus and phalangeal bones were missing from both hands. Following is a study of the skull:

Length, max.	17.4
Breadth, max.	12.7
Height, basion-bregma	12.8
Capacity 1220 c.c.	
Cranial module	14.3

Indices:

Cephalic	72.9	Dolichocephalic
Height-length	73.5	Orthocephalic
Height-breadth	100.7	

Sutures simple. Process of occulusion beginning on exterior of vault.

Neither of the skulls conform with the typical Iroquois with a high vault, broad nose and long head. Burial No. 1 was brachcephalic indicating a round headed Algonkian physical horizon.

Burial No. 2 was dolichocephalic indicating an Iroquoian physical horizon.

The variance of the two skulls may indicate admixture. But, regardless, of the suggestion it is impossible to form valid conclusions, concerning a physical type, from a skull, or two. Individual characteristics may occur and only a tentative reliance may be placed on evidence of admixture.

SCHULTZ FARM SITE

Chart 7, 7A

One of the most important sites explored by the expedition was on the farm of Edward N. Schultz in Manor Township, Lancaster County. It was located on an elevation with a central station of 64.65 overlooking the river directly south of Witmer's Run between Blue Rock and Turkey Hill. At one time the property was owned by the Witmer family.

Mr. Schultz very kindly gave his permission to excavate and one of the largest archaeological village sites in the east was thoroughly explored. It contained two hundred seventy-two pits of various sizes and shapes and thirteen burials.

As this site was too large to chart by methods used on smaller more concentrated ones, a central bench mark was established (No. 5 + 64.65) and all stations were located by chaining compass bearings from this point. The elevations surrounding the site were recorded and a base line established from the river, a profile of which can be seen on Chart 7 A. The object of this close study of elevations was to establish, if possible, that this was the location of one of the important early Susquehannock Indian forts. Our findings will be discussed in the summary on this site.

A complete description of the work done on the Schultz farm would take up a large volume. Several thousand specimens were found and information recorded in detail that is available in the field notes in the files of the Pennsylvania Historical Commission, but cannot be presented here.

All the burials were in fragmentary condition and it was impossible to secure accurate physical data. Most of them were shallow and several had been partially destroyed by cultivation as many bones were above the six inch plow level. They were probably intrusive on this village site, the burying ground of which could not be explored.

BURIAL NO. 1

Skull depth from surface	6 in.
Width of disturbed area	2 ft. 6 in.
Length of disturbed area	4 ft. 6 in.
Posture—extended—facing	310°

Sex male—approximate age—young
Cephalic notations—crushed skull
Position: Right arm down side with hand on sacrum
Left arm at side
Right leg extended slightly flexed
Left leg extended
Trunk lying on back, vertebrae on hardpan, beneath
lumbar vertebrae was a small stone.
Teeth—good condition
Deformations—none
Articles in soil above remains—2 potsherds

A girdle containing 520 bone beads, 475 perfect, was around the loins. A small bone pendant under the right pelvis. A large diamond shaped shell, perforated at one end and in the center, and three conical bone beads were associated with the pendant. Beneath the skull were two matched tubular shell beads, 1 in. long.

BURIAL NO. 2

Skull depth from surface 11 in.
Diameter of disturbed area 1 ft. 10 in. by 6 ft. 8 in.
Posture—extended—facing 345°
Head—east—sex—indeterminate.
Age—indeterminate adult.
Position—Right arm down, hand on pelvis.
Left arm down, hand on pelvis.
Right leg extended.
Left leg extended.
Trunk—on back.
Many bones missing—general condition poor.

Near the top of the crushed skull was a small steatite dish, and a flat piece of steatite partially worked. At the distal end of the left humerus rested a small steatite dish 4 in. long, 1¾ in. wide and 2¼ in. deep. At 6 in. from the right pelvis and 2 in. from the femur was a small earthenware pipe, without decoration. Near the west wall on location level was a small triangular arrowpoint made of white quartz. Two potsherds in the earth above the pipe may have been intrusive in the grave.

The bones with BURIAL No. 3 were in such fragmentary condition that nothing could be gained by giving detailed data

here. Only a small portion of the parietal remained with a section of the inferior maxillary, and the upper trunk was completely destroyed. Sections of the femurs and tibias in place indicated an extended burial.

BURIAL NO. 4 was in fragmentary condition 16 in. below the surface. It was of particular interest because it had been flexed on the right side. The grave contained no artifacts.

BURIAL NO. 5—This burial was located at a depth of 16 in. It was in very poor condition and extended with its head to the east. The bones appeared to be those of a young adult lying on back, face up.

BURIAL NO. 6—Skull depth from surface 16 in.

Disturbed area 1 ft. 8 in. by 6 ft. 3 in.

Posture—Extended on back, head to east, facing west.

Age—Young adult.

Position—Right and left arms down sides, hands on pelvis.

Right and left legs extended.

Trunk on back.

Many disintegrated bones.

General condition very bad.

Objects above remains—At an elevation of 3 in. above left tibia was a bone awl and one triangular arrowpoint made of white quartz.

The inferior maxillary contained two badly decayed teeth and the skull was crushed so that measurements were impossible. Six elk teeth, perforated for suspension, were found below the skull, and probably formed part of a necklace. Objects other than the elk teeth may not have belonged with the burial as the surrounding soil within a radius of 10 ft. and to a depth of between 14 in. and 16 in. was black, indicating a house occupation, or midden.

BURIAL NO. 7—This disturbed burial was that of a young child. It was extended with the top of the head to the east.

BURIAL NO. 8—Skull depth from surface 8 in.

Disturbed area 2 ft. by 5 ft. 3 in.

Posture—Extended.

Sex—Male—Young adult.

Position—Right and left arms extended, hands on pelvis.

Right and left legs extended—femurs and tibiae broken.

Condition—Very poor, disturbed by soil cultivation.

No artifacts. Pelvis in good condition.

Skull crushed.

BURIAL NO. 9—Skull recorded at a depth of 7 in. The remains had been disturbed by soil cultivation and were apparently those of a child about eight years of age. No artifacts were noted and a small fire pit was found near the head.

BURIAL NO. 10—Skull depth 12 in.

Disturbed area 1 ft. 8 in. by 5 ft. 6 in.

Posture—Extended.

Sex—Indeterminate, probably male.

Head—East—Facing north.

Position—Right arm on side, hand on pelvis.

Left arm extended ulna and radius missing.

Right and left leg slightly flexed inward at the distal ends of the femurs.

Trunk—On back.

Many bones missing—general condition very bad.

On the right side of the skull was a small Iroquoian type pottery vessel. No other artifacts were recorded.

BURIAL NO. 11—Skull depth 13½ in.

Disturbed area 2 ft. by 6 ft. 6 in.

Posture—extended.

Sex—indeterminate.

Position—Right and left arm at sides with hands on pelvis.

Right and left legs extended.

Many bones were missing and the general condition was very bad. A small Iroquoian type pottery vessel was found on the top of the crushed skull.

BURIAL NO. 12—A disturbed extended burial in such poor condition that exact physical measurements could not be made. It headed east and contained no associated artifacts.

BURIAL NO. 13—An extended burial with a crushed skull and disintegrated long bones. Like the other burials on this site the skull was thin and the long bones delicate.

PITS

Two hundred and seventy-two pits were noted on this site. Each one was carefully investigated, and elevations of artifacts and strata recorded. A separate study was made of each pit and an attempt made to ascertain its cultural horizon. Most of them were of the regular Iroquoian types used for storage, fires and house posts. Several storage pits were "bell shaped" with a small opening at the surface (pl. 101). The sloping walls allowed natural drainage, and were practical because only a small opening had to be covered and hidden when the owner was away. Many pits showed evidence of having been lined with bark, and several had secondary use as fireplaces.

It is impossible to present a detailed record of all the pits here as it would involve endless repetition. A very brief description of the first seventy-five explored gives a fair idea of their size and contents. In the final analysis of the site all the pits have been taken into consideration.

<i>Pit No.</i>	<i>Depth</i>	<i>Size</i>	<i>Disturbed Area</i>	<i>Contents and Use</i>
1	1 ft. 6 in.	3 ft.	Dark earth with charcoal and ash.	20 potsherds, 2 pieces of worked quartzite, 1 hammerstone, 1 animal vertebrae (possibly deer). Storage.
2	3 ft. 7 in.	4 ft.	Charcoal and clay mixed with ash.	Large potsherds from 10 in. below the surface scattered to within 10 in. of the bottom, 5 fragments of charred corn cob with corn still on some of them, 1 bone awl (large), 1 section of a bone fishhook, 2 triangular quartz arrowpoints, 1 beaver tooth, bones of bear, deer, beaver, raccoon and turkey; also, fish scales and clam shells, 1 lump of blue pottery clay. Storage.

Pit No.	Depth	Size	Disturbed Area	Contents and Use
3	4 ft. 7 in.	3 ft. 2 in.	Charcoal and ash.	1 small piece of iron at a depth of 1 ft. 1 in. in east side of pit, 1 small bone implement 1 ft. 4 in. deep, 1 unfinished awl at 2 ft. 3 in., 1 partly disintegrated bone awl lying on the floor of the pit, 1 worked beaver tusk at 3 ft., 1 stone metate, 2 large and 2 small net sinkers, 1 muller, potsherds and several triangular quartz points, animal and bird bones, fire burned stones. Storage-Fire. This pit was originally used for storage and later filled to a depth of 3 ft. 6 in. and then used as a firepit. It had a 4 in. bed of charcoal and ash, 3 ft. from the surface, on the top of which was a layer of fish bones.
4	1 ft. 6 in.	4 ft. 6 in.	Black filled with charcoal and ash.	Bottom lined with large stones, several covered with ash and charcoal. Fire.
5	1 ft. 6 in.	2 ft.	Black sandy loam mixed with charcoal.	3 potsherds, 1 bear tooth, deer antler, 1 piece of vertebrae, 1 piece of femur, 1 net sinker, 1 pitted stone. Storage.
6	2 ft.	1 ft. 6 in. 2 ft.	Black mixed with yellow sandy loam, no charcoal.	1 fragment of deer bone. Post-hole.
7	2 ft.	2 ft. 6 in.		4 fire burned stones, 1 small lump of blue pottery clay, mussel shells lying in the southwest side 1 ft. 6 in. deep. The fire burned stones were lying 1 ft. 6 in. from the top of pit. Storage and Fire.
8	3 ft. 10 in.	3 ft.	Sandy loam, charcoal with ash.	6 bone awls, 1 discoidal shell bead, 1 split beaver tusk; beaver, raccoon, muskrat, deer, elk, bear, fish and wild turkey bones. Pottery scattered throughout. One small stone pestle, showing use on one end, 3 triangular quartz arrow-points and fire burned stones. 1 large section of deer antler with worked point, 1 large mortar. Storage.

Pit No.	Depth	Size	Disturbed Area	Contents and Use
9	3 ft. 5 in.	3 ft. 2 in.	Dark earth, charcoal and ash.	Small clam shells, deer, elk, beaver, bear, small mammal bones, 1 fishhook blank, 2 bone punches, 4 antler points, potsherds, 1 bone awl point, 1 deer toe bone (worked), 1 elk tooth, 2 beaver incisors (worked), 1 piece of deer antler (worked). Storage.
10	2 ft. 10 in.	2 ft. 8 in.	Dark earth mixed with charcoal.	None. Fire.
11	2 ft.	2 ft.		1 piece of pottery. Posthole.
12	1 ft. 4 in.	1 ft. 6 in.	Dark, very little charcoal.	9 potsherds (red), deer bones. Storage.
13	1 ft. 9 in.	4 ft. 8 in.		A typical house fire pit with large stones scattered in the disturbed area. White ash layer approximately 14 in. thick. Lying in center of pit was a bed of charred sticks ranging in thickness from $\frac{1}{4}$ in. to $\frac{1}{8}$ in., charred corncobs and corn husk. The husk was part of a mat. On the top of the matting was a very small piece of woven, grass like fiber. Beneath the mat the ash layer extended to the floor of the pit. Deer, raccoon and wild goose bones. 1 pitted hammerstone, pottery fragments, 1 bone awl. Storage and Fire.
14	1 ft. 3 in.	2 ft. 4 in.	Dark mixed with charcoal and mussel shells.	1 beaver tooth, 1 bone awl, 1 piece of pottery, 1 pottery disc, large quantity of mussel shells, deer bones. Storage.
15	2 ft. 8 in.	3 ft.	Dark with ash and charcoal.	1 turkey leg bone, worked on one end, 1 bone awl. Fire.
16	2 ft. 5 in.	2 ft.	Dark, no charcoal	None. Posthole.
17	3 ft. 6 in.	2 ft. 9 in.	Dark earth and ash.	1 small ball of blue pottery clay, 1 bone awl (double pointed), upper jaw of beaver, 2 pieces of pipe stem, 1 section of elk jaw, 1 pottery vessel, 1 raccoon bone, 1 long bone awl, 2 fragments of awl. Potsherds scattered throughout (red ware). On the bottom on the east side a human patella, 1 worked goose bone, worked duck bones. Fire and Storage.

Pit No.	Depth	Size	Disturbed Area	Contents and Use
18	1 ft. 10 in.	3 ft.	Dark with light ash deposit.	None. Posthole.
19	2 ft. 4 in.	2 ft. 1 in.	Ash and clay.	1 iron axe, 16 in. from surface, 1 bone punch, 1 piece split bone, 1 raccoon bone, 1 split beaver tusk, 3 small potsherds, white quartz chips. Storage and Fire.
20	2 ft. 4 in.	2 ft. 1 in.	Ash and clay.	1 iron axe, 1 bone punch, 1 bear tusk, raccoon bones, sherds and quartz chips. Storage.
21	3 ft. 4 in.	2 ft. 3 in. by 2 ft.	Ash and clay.	1 ft. 5 in. from surface in ash deposit 25 white quartz chips in one pile. 3 in. below this a well used hammerstone. On south side of pit next to wall flat sharpened split bone, probably a pottery marker. 3 ft. 4 in. from surface on bottom pointed butt celt, edge fractured on one side. Beaver tooth, piece of clay pipe stem, 2 wolf teeth, potsherds in ash, fragments of deer and bear bones scattered throughout pit, clam shells. Storage.
22	4 ft. 6 in.	8 ft. 9 in.	Mixed ash and clay.	Potsherds (scattered), 1 muller and hammerstone near center, 1 hammerstone, 6 triangular quartz arrowpoints at various depths, 1 large jasper triangular arrowpoint, 2 flint triangular arrowpoints, 2 bird bone aw's, 1 split bone awl, 2 small discoidal shell beads, clam shells, animal bone. Storage.
23	2 ft.	3 ft. 3 in.	Mixed charcoal and ash.	None. Posthole.
24	2 ft. 4 in.	2 ft. 8 in.	Charcoal ash.	1 Potsherd. Fire.
25	1 ft. 10 in.	2 ft. 8 in.		Layer of fresh water, clam shells 6 in. below the surface.

<i>Pit No.</i>	<i>Depth</i>	<i>Size</i>	<i>Disturbed Area</i>	<i>Contents and Use</i>
26	2 ft. 6 in.	3 ft. 2 in.	Charcoal and ash.	Scattered through the ash and near the surface were several stones approximately 6 in. in diameter. Animal bones were scattered through the mass from the surface soil to the bottom. 5 bone awls, 1 piece of antler, shaped for a handle, gouged out in the center, evidently used for hafting. Tibia of a deer showing use as a scraper. 1 split bone, sherds varying in types of decoration. On the north side penetrating the wall 4 in. is the south wall of Burial No. 3. The pit had been made sometime after the burial had taken place. Storage.
27	3 ft.	4 ft. 3 in.	Dark earth with ash and charcoal.	1 notched arrowpoint (argelite), 1 bone punch, sherds. Storage and Fire.
28	1 ft. 6 in.	2 ft.		None. Fire.
29	1 ft. 6 in.	3 ft.		None. Posthole.
30	1 ft. 4 in.	4 ft.	Dark earth, charcoal, no ash.	Clam shells in the surface soil on west side to within 8 in. of bottom, 1 small piece of pottery.
31	1 ft. 6 in.	2 ft. 7 in.	Dark earth and charcoal.	Potsherds, 1 deer bone fragment. Storage.
32	1 ft. 6 in.	6 ft.	Dark earth.	1 pottery vessel (large). Storage.
33	3 ft. 9 in.	3 ft. 9 in.	Charcoal, dark earth and ash.	Layer of yellow clay 3½ in. thick and running from a depth of 1 ft. 6 in. in the west to 2 ft. 4 in. on the east side. Potsherds, bear, raccoon, elk, fish and bird bones, 1 bone punch, 3 in. long, 3 lumps of blue pottery clay with broken clam shells mixed into it, 1 bone awl, 1 elk scapula, 2 deer antlers, 1 stone digging implement. Storage and Fire.
34	1 ft. 8 in.	2 ft.	Dark earth and ash.	4 potsherds, animal bone, 1 triangular arrowpoint. Storage and Fire.

<i>Pit No.</i>	<i>Depth</i>	<i>Size</i>	<i>Disturbed Area</i>	<i>Contents and Use</i>
35	1 ft. 10 in.	1 ft. 4 in.	Dark earth.	11 in. from the surface a ball of blue pottery clay, bone and clam shells. Storage.
36	1 ft. 6 in.	2 ft. 9 in.	Charcoal, dark earth and wood ash.	Animal bone. Posthole.
37	3 ft. 7 in.	3 ft. 4 in.	Ash and clay.	Iroquoian type potsherd, 14 in. from surface. Heavy layer of wood ash extended within 8 in. of bottom. Pit perfectly flat on bottom contained mixed clay, ash and charcoal. Bone punch, small flat pebble with perforation in center, femur of rodent, 1 bone awl, stone metate, pottery clay. Storage.
38	3 ft. 3 in.	3 ft. 9 in.	Charcoal, dark earth and ash.	Sherds, 1 large stone metate, 1 small celt, bones of deer, bear, beaver and fish, 1 crude bone awl, clam shells, 1 metal knife blade, 2 pieces of brass wire, 1 small triangular piece of brass. Storage—Historic.
39		2 ft. 4 in. 2 ft. 6 in.	Dark earth and charcoal.	None. Posthole.
40	2 ft. 7 in.	2 ft. 8 in.	Ash and charcoal.	Layer of fire cracked stones just below surface soil, animal bone, 2 sherds, 1 small pestle, 1 hammerstone. Fire.
41	2 ft. 3 in.	3 ft. 4 in.	Ash and clay.	Pit on slope near lower end of knoll. 3 in. layer small mussel shells covered entire area. Just below surface soil large fire cracked stone layer extended through mass of ash and clay to bottom of pit. Animal bone charred, potsherds, 1 elk incisor, worked, evidently for hafting, 1 bear tooth, 1 chipped bone, incomplete implement, 1 triangular bone arrowpoint, all on 19 in. level. Storage and Fire.
42	2 ft. 5 in.	3 ft. 3 in.	Ash and clay.	Animal bone, 10 in. layer of ash, 8 in. from bottom of pit, 1 ft. 5 in. from surface perfect bone fishhook on west side 10 in. from wall, 1 small bone awl, potsherds. Fire and Storage.

Pit No.	Depth	Size	Disturbed Area	Contents and Use
43	2 ft. to bottom	3 ft. 1 in.	Clay, very little ash.	2 brass jinglers, 1 triangular arrowpoint, fish, deer and elk bones, potsherds (light color).
44	5 ft. 4 in.	3 ft. 4 in.	Ash, gravel and clay.	Heavy deposit of wood ash to bottom, bear bones 3 ft. from surface and scattered to bottom of pit with those of elk, wild duck, goose, turkey, fish, crane, raccoon, and other unidentified animals. Potsherds, raccoon bone awl, 4 split bone awls, 1 bone pottery marker, 4 antler punches, 1 antler implement, unfinished. On bottom, 1 beaver tusk, 1 worked bear tusk, 1 round gaming stone, 2 bone awls, 3 ft. 3 in. from surface a piece of iron 7 in. long, $\frac{1}{2}$ in. diameter, 2 ft. from surface 1 long flattened sectional antler perforated on end. Storage—Bell type.
45	4 ft. 4 in.	3 ft. 9 in.	Sand, ash and clay.	Sherds, 1 earthenware pipe stem. Storage.
46	3 ft. 10 in.	4 ft. 6 in.	Clay and ash.	Bones of ducks, geese and small unidentified animals. potsherds, clam shells, fish bones, east side of pit composed almost entirely of clay and gravel. Small hearth encountered just below surface soil. 2 bone punches or flakers, 2 small bone awls, 1 pottery marker (bone), 1 stone pot cover, $\frac{1}{2}$ large clay pipe bowl, 1 stone pestle. Storage—Bell type.
47	2 ft. 11 in.	2 ft. 11 in.		Bones of deer, elk, bear, raccoon and fish. Clam shells just below surface soil, potsherds from surface soil to bottom of pit, bone awl, quartz chips, potsherds and about one-half of a large pot. Storage.

Pit No.	Depth	Size	Disturbed Area	Contents and Use
48	3 ft. 11 in.	4 ft. 2 in.	Black earth, ashes and yellow clay.	Bones of elk, deer, bear, raccoon, goose, turkey, duck. Scales of large fish, clam shells, potsherds (one large pot), 1 mul-ler and hammerstone below surface soil, 1 unfinished celt, 1 pottery graver, 1 split antler 10 in. long partially decorated on end, notched at butt, 2 rac-oon bones, 1 worked, 2 bone punches, 2 split beaver tusks, 1 bone pottery marker, 3 split bone awls, 1 bone pottery marker, 1 small pot, 10 in. from bottom in ash bed, 1 small unbaked flat pottery dish. Several layers of pot-sherds on bottom of pit. Stor-age—Bell type.
49	1 ft. 9 in.	3 ft. 2 in.	Charcoal, ash.	Potsherds, 1 antler perforated, 1 bone bead, 1 unfinished trian-gular quartz point, 1 bone im-plement, use unknown, burned stone, animal bone. Storage Bell.
50	4 ft.	4 ft. 2 in.		Flint core, 1 pot lying on clay 8 in. from bottom, N. W. cor-ner, small iron celt 14 in. from surface. Storage Bell.
51	2 ft. 7 in.	2 ft. 10 in.		6 in. layer very dark and com-pact ash and soil on bottom. Fire stones, 1 bone awl, 1 tri-angular arrowpoint. Fire.
52	1 ft. 7 in.	2 ft. 4 in.	Charcoal, a sh, black dirt.	2 small potsherds just below sur-face soil. Balance of pit solid white ash on burned clay. Fire.
53	4 ft. 6 in.	3 ft. 6 in.	Ash and clay.	Animal bones, potsherds, fire stone, 2 triangular arrowpoints, blue pottery clay. Storage—Bell.
54	1 ft. 2 in.	3 ft. 8 in.	A sh, burned stone, clay.	1 bone punch, 10 in. below sur-face, animal bones and clam shells, 4 small potsherds in bottom of pit. Fire.

Pit No.	Depth	Size	Disturbed Area	Contents and Use
55	3 ft. 4 in.	4 ft. 11 in.	Clay and clam shells.	From surface to 10 in. from bottom clay containing dark soil, burned bone, small potsherds and charcoal. On bottom a solid mass of small clam shells containing bear bones. 2 unfinished bone implements. Storage and Fire.
56	4 ft. 1 in.	3 ft. 8 in.	Dark earth, charcoal and ash.	Pottery fragments, several sherds of a large pot, 1 bone awl, 5 in. long, 1 bone awl, 2½ in. long, 1 bone awl, 1½ in. long, 1 bone awl, 3¼ in. long, partly charred on the end, 1 split bone awl, 4¼ in. long, 1 split bone awl, 2½ in. long, 1 triangular arrowpoint, bones of deer, elk, bear, fish and turkey. Storage.
57	3 ft. 11 in.	3 ft. 8 in.	Charcoal, ash and stained earth.	Fragments of one large pot, 1 bone awl, 3½ in. long, 2 bear tusks, 1 triangular arrowpoint, fire burned stones, bones of deer, bear and raccoon, 1 fragment of beaver tooth worked. Storage and Fire.
58	4 ft. 3 in.	4 ft.	Ash and clay.	Animal bones, clam shells, potsherds. Fire.
59	3 ft. 10 in.	3 ft.	Dark earth.	Ash from the bottom of the surface soil to the floor of pit. Sherds from 4 pots, 1 deer antler, 1 goose bone, 1 deer scapula, 1 charred hickory nut, 1 (pot cover), fire burned stones. Storage, Fire and Bell.
60	2 ft. 5 in.	2 ft. 6 in.	Dark earth with charcoal and ash.	Animal bone, clam shells.
61	2 ft. 6 in.	3 ft. 3 in.	Charcoal and ash.	Potsherds, 3 triangular arrowpoints, bones of deer, elk bear and fish, mussel shells.

<i>Pit No.</i>	<i>Depth</i>	<i>Size</i>	<i>Disturbed Area</i>	<i>Contents and Use</i>
62	2 ft. 10 in.	3 ft.	Dark, mixed with wood ash.	Potsherds, bones of deer, bear, fish and fowl, clam shells. At a depth of 18 in. on south side embedded in the wall an antler comb with a human effigy with arms folded and hands on breast. On the 18 in. level an incomplete bone effigy of a bird, 2 large net sinkers of mica shist, 1 bone punch. Storage and Fire.
63	3 ft. 6 in.	4 ft. 3 in.	Black mixed with wood ash.	Clam shell below surface soil, layer of clay and ash 15 in. containing deer bones, layer of ash 10 in. in depth containing potsherds. Antler perforator, phalangel bone, bone punch, beaver tooth, fish bone awl, fire stone, 1 small bone awl. Storage and Fire.
64	4 ft. 4 in.	4 ft. 8 in.	Clay and ash.	Stone pestle on bottom, with unfinished piece of flattened antler. Fire.
65	4 ft. 7 in.	4 ft. 3 in.	Dark with charcoal and ash.	Potsherds (one vessel), 1 bowl of a trumpet type pipe, 1 unfinished fish hook, 2 bone awls. The upper portion of a deer skull. 3 fragmentary pieces of deer antler, fire burned stones. Storage—Fire.
66	2 ft. 10 in.	3 ft. 10 in.	Charcoal and ash mixed in the dark soil.	Potsherds scattered, bones of deer, elk, bear, raccoon, squirrel, turtle and fish. 1 pottery disc, 2 bone awls, 1 straight shanked arrowpoint of black flint, 1 notched arrowpoint, 2 triangular quartz arrowpoints, 2 broken points of bone punches. Storage.
67	1 ft. 2 in.	2 ft. 9 in.	Clam shells and charcoal.	Clam shells, potsherds, animal bones. Storage.
68	1 ft. 10 in.	3 ft. 7 in.	Charcoal and ash.	At a depth of 8 in. there was a solid layer of ash approximately 6 in. deep. Pottery fragments, animal bone. Fire.
69	1 ft.	7 ft.	Dark earth.	Small bones of bear and deer, scattered, 1 antler punch. Fire.

Pit No.	Depth	Size	Disturbed Area	Contents and Use
70	4 ft. 1 in.	3 ft. 10 in.		Potsherds, 3 bone awls, 3½ in. 5¼ in. and 6¾ in. long. 1 split bone awl, 5 in. long. 1 bear tusk, worked, bones of deer, elk, bear, raccoon and fish. Storage.
71	3 ft. 6 in.	2 ft. 6 in.	Charcoal and ash.	At a depth of 2 ft. 8 in. was a small piece of brass, 2 hammerstones, 1 deer femur worked at both ends, split lengthwise and chipped along the sides. 1 bear tooth (drilled), 1 bone awl, 4¾ in. long, 1 bone fish hook blank, 1 beaver tooth, 1 turtle shell, sherds, large rocks on floor. Fire and Storage.
72	2 ft. 6 in.	3 ft. 11 in.	Dark mixed with yellow clay.	1 stone celt, 6½ in. long and 2½ in. at the blade, potsherds, large stones, animal bones. Storage.
73	4 ft. 9 in.	4 ft.	Clay and ash.	Animal bone, clam shell, 1 split bone awl, 1 antler perforator, potsherds, artifacts in ash layer 1 ft. 4 in. from bottom. Fire and Storage.
74	4 ft. 2 in.	3 ft. 3 in.	Dark earth, charcoal and ash.	Potsherds, 1 shell bead discoidal, 1 deer phalange (drilled). Storage.
75	3 ft. 4 in.	3 ft. 2 in.		? fragments of pottery, animal bone, 12 fire burned stones 8 in. from the bottom. Fire.

BONE AND ANTLER OBJECTS

The pre-contact Susquehannock were superior workers in bone. Their preference for its use in a wide variety of implements is attested by the rich finds in the deep pits on the Schultz Site.

AWLS—Of all the artifacts of bone recovered, awls and awl-like implements were the most numerous. They were fashioned from bones of various animals, birds, and fish. In size they varied from 1½ in. to 8 ½ in. in length. They can be grossly classified as follows:

- | | | | |
|------------------------------|---|--|--|
| I.
Awls | { | 56 Splinter types | —Length $1\frac{1}{2}$ in. to $5\frac{1}{2}$ in., pl. 102. |
| | | 38 Bird radii, fish bones | —Length $2\frac{1}{2}$ in. to 5 in., pl. 103. |
| | | 12 Natural joints (modified) | —Length 3 in. to $7\frac{1}{2}$ in., pl. 104. |
| | | 13 Hollow bird bones (delicate) | —Length 2 in. to $6\frac{1}{2}$ in., pl. 105. |
| | | 12 Spatulates | —Length $2\frac{1}{2}$ in. to 6 in., pl. 106. |
| 2.
Awl-like
Implements | { | 3 Double points | —Length 2 in. to 4 in., pl. 107, figs. A, B, C. |
| | | 5 Raccoon bones | —Length 2 in. to $3\frac{1}{2}$ in., pl. 107, figs. D, E, F. |
| | | 14 Punches (blunt, smoothly finished) | —Length 4 in. to 9 in., pl. 108, figs. A, C, D, E. |
| | | 4 Punches (blunt, natural joint) | —Length 6 in. to $8\frac{1}{2}$ in., pl. 108, figs. B, F. |
| | | 5 Chisels | —Length $3\frac{1}{2}$ in. to $7\frac{1}{2}$ in., pl. 109, fig. A. |
| | | 1—2=116 Broken and intermediate types. | |

Although generally termed awls by archaeologists, these useful implements were employed for many purposes. Their points varied considerably, some were sharp, others blunt and many chisel and gouge shaped. The limb bones of small mammals and the wing bones of birds, some retaining the natural articular end were favored. The bird radii and fishbones required very little sharpening and were probably employed also as pins. The natural joints of small animals and birds were also cut off and used for awl handles. One with an iron awl in place was recovered (pl. 110).

The examples illustrated represent only a very small selection of outstanding types. Several variations were noted which expressed individual workmanship and taste.

SCHULTZ SITE

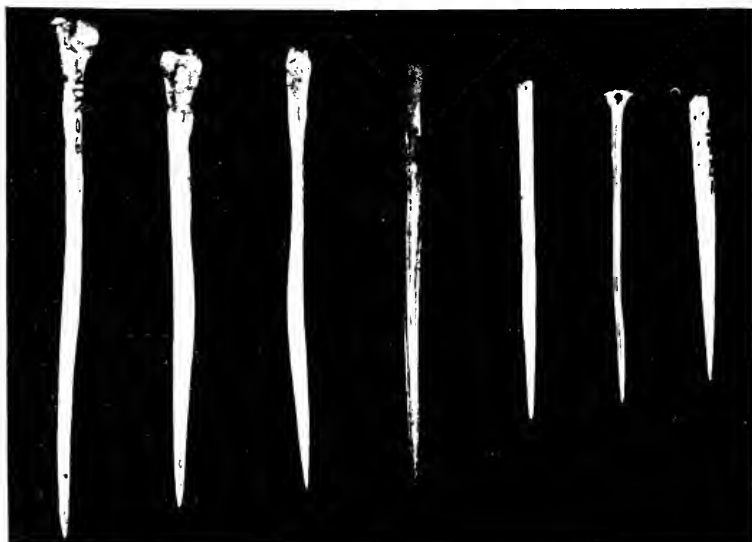
PLATE 102



AWLS, SPLINTER TYPE MADE OF BONE

SCHULTZ SITE

PLATE 103



AWLS MADE OF BIRD AND FISH BONE

SCHULTZ SITE

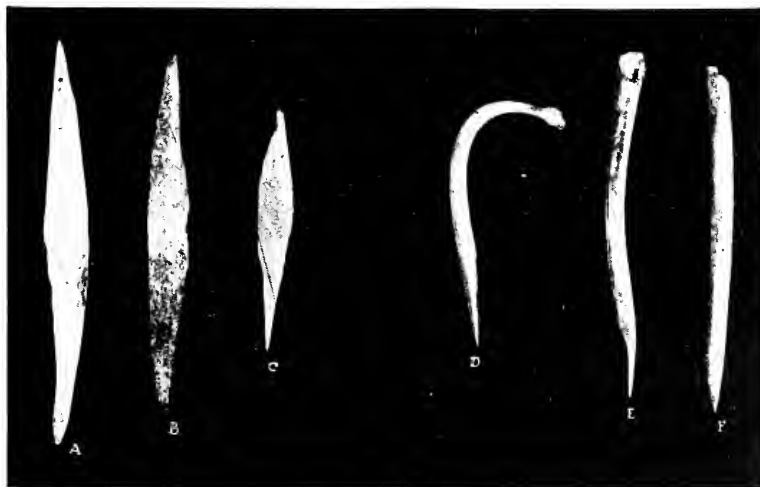
PLATE 104



AWLS MADE OF BONE WITH THE NATURAL JOINTS USED AS HANDLES

SCHULTZ SITE

PLATE 107

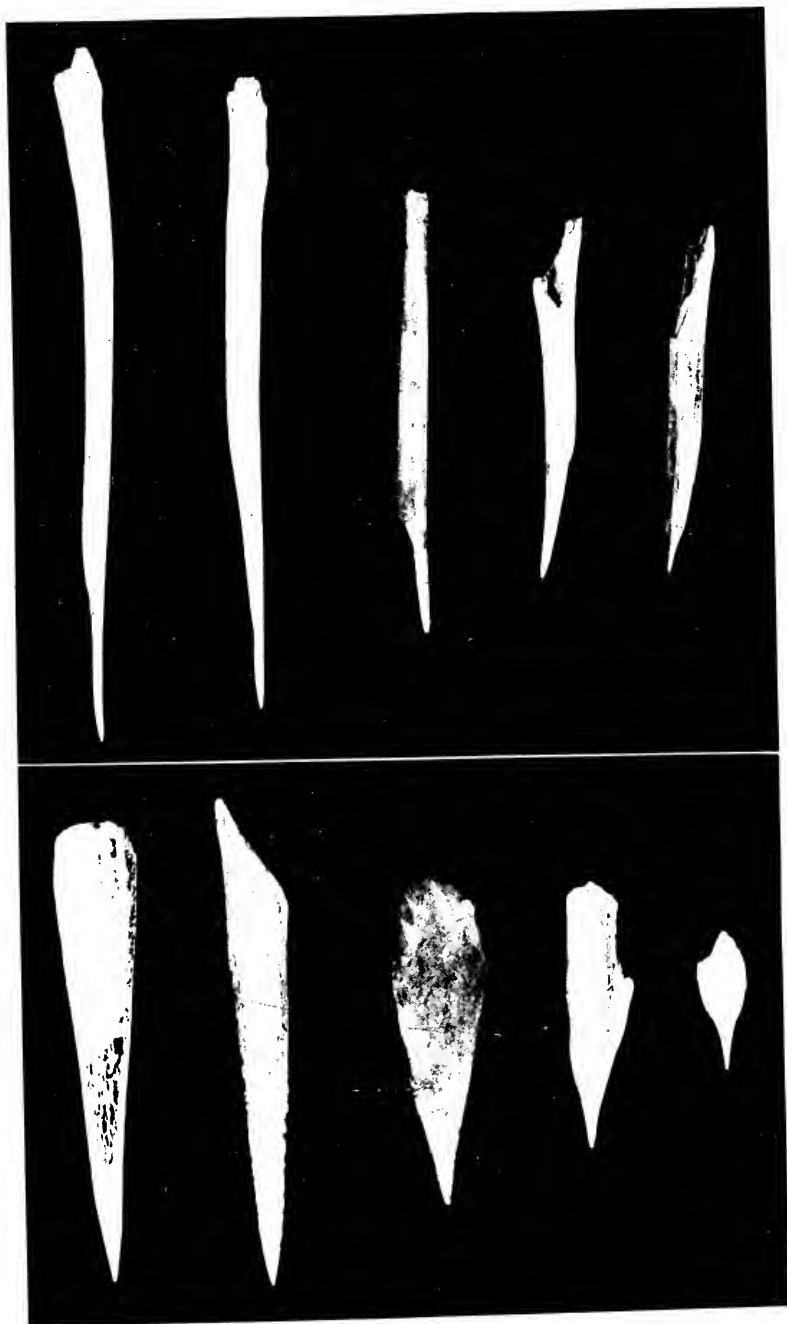


AWLS MADE OF BONE

Figures A, B, and C, represent double pointed Implements. Figures D, E, and F, are made from raccoon bones

SCHULTZ SITE

PLATES 105 AND 106



AWLS MADE OF HOLLOW BIRD BONES
AWLS MADE OF BONE, SPATULATE TYPE

SCHULTZ SITE

PLATE 108



PUNCHES MADE OF ANTLER AND BONE

SCHULTZ SITE

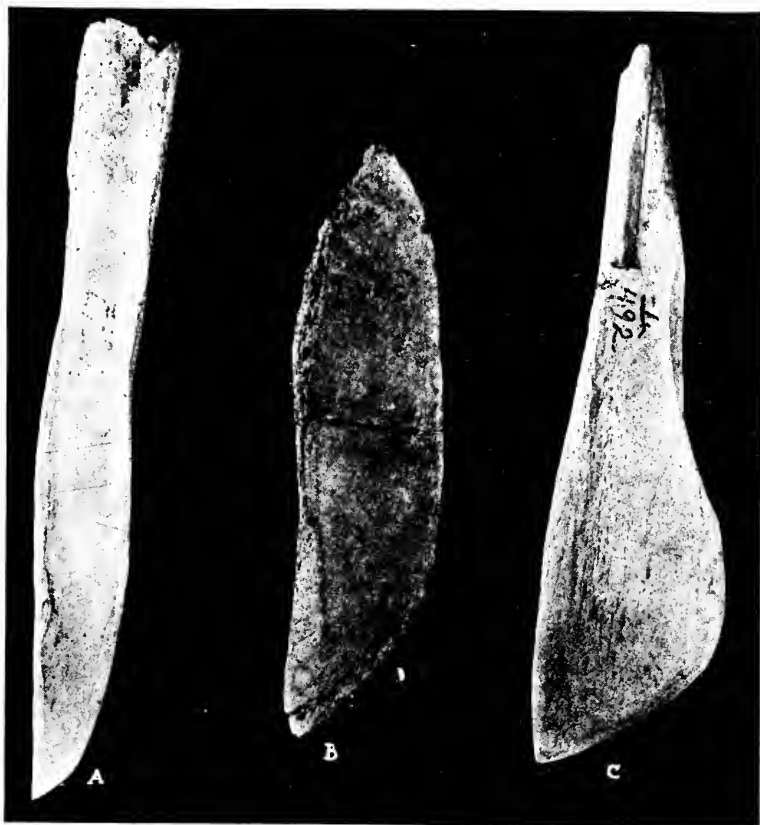
PLATE 109



CHISELS MADE OF ANTLER

SCHULTZ SITE

PLATE 111



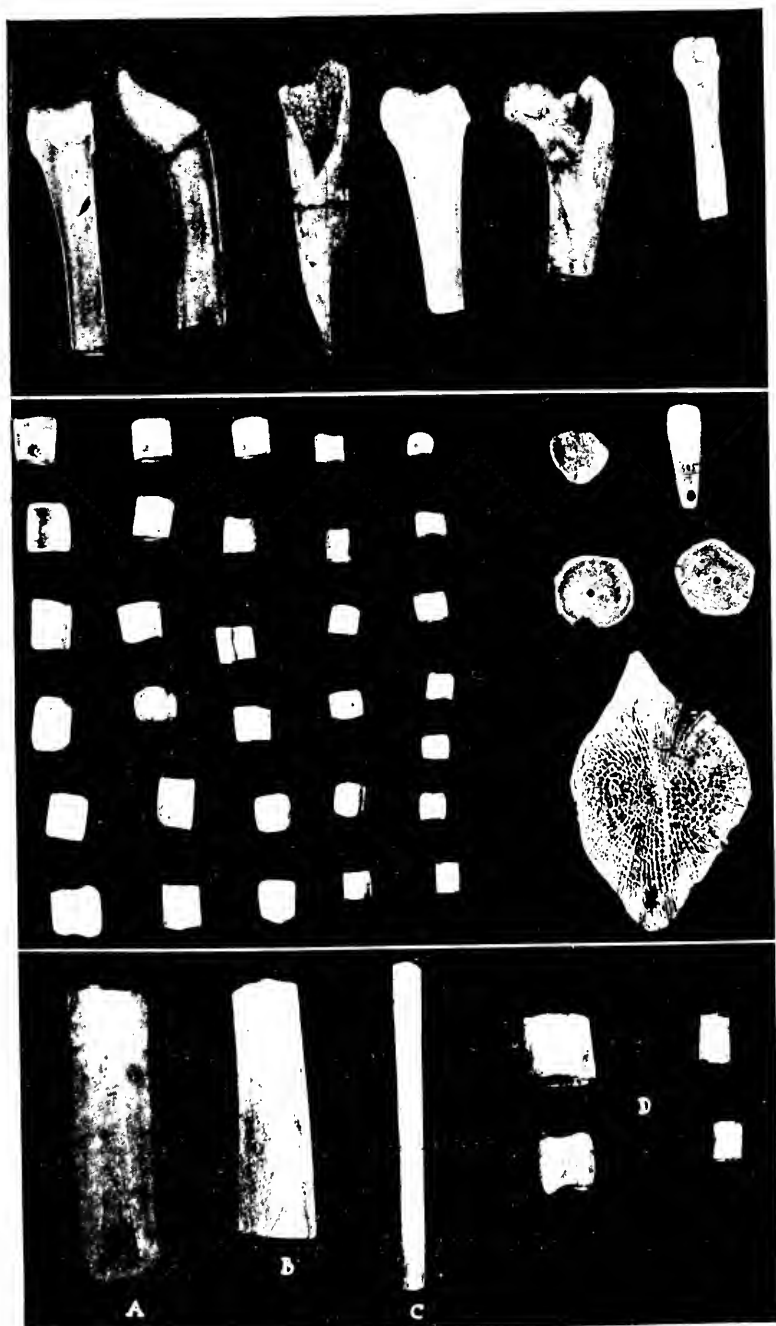
GRAVERS MADE OF BONE. PROBABLY USED TO SCRAPE OR ENGRAVE
POTTERY VESSELS

GRAVERS—Three unusually interesting implements were found in Pits 21 and 46 (pl. 111). They were spatulate shaped bones, beveled at the distal end, and probably used to scrape or engrave pottery. Fig. A had a rounded blade and fitted perfectly into many of the grooves on the pottery vessels.

TUBES AND BEADS—Tubes of hollow bone were found in varying sizes, and were neatly cut on both ends (pl. 112, figs. A, B, C). In length they varied from $2\frac{1}{2}$ in. to 5 in., and in diameter from $\frac{1}{8}$ in. to $\frac{3}{4}$ in. The bones were usually the femur, ulna or radius of birds or small animals. Their use is problematical although some of them may have been

SCHULTZ SITE

PLATES (DOWN) 110, 113, 112



AWL HANDLES MADE FROM THE NATURAL JOINTS OF SMALL ANIMALS
 BEADS MADE OF BIRD BONE, WITH PENDANTS MADE OF FISH SCALES
 TUBULAR BEADS MADE OF BIRD BONES

employed as whistles or calls, and others intended for bead making. Among various groups of living Indians similar tubes are still employed by medicine men to suck poison from cuts, and under certain conditions women have to use them for drinking.

BEADS—Bone beads in varying sizes and lengths were common (pl. 113). The process of making them was simple. It consisted of merely scoring and severing any hollow bone the desired length, and rubbing the ends smooth. They were used in girdles worn around the waist and in necklaces or waist bands.

HARPOONS—It has always been a question to what extent the prehistoric Iroquois used the harpoon. Certain objects have been designated by archaeologists as harpoons, but there has always been some element of doubt about their authenticity. The bone and antler harpoon points recovered from the pits on the Schultz Site prove conclusively that these people had advanced knowledge of the use of barbed harpoons (pl. 114, figs. C, D). In type they are similar to those used by sub-Arctic Indians and the Eskimo and were probably used on the end of a pole for taking fish.

HOLLOWED PHALANGEAL BONES—These objects have been illustrated and described from the Washington Borough village site. They were made from the toe bones of deer and used as ornaments as well as in games.

MISCELLANEOUS OBJECTS OF BONE—Innumerable fragments of bone combs were recorded. One fragment was carved to represent a bear and apparently two of these figures were rampant on the back of the comb (pl. 115, fig. B).

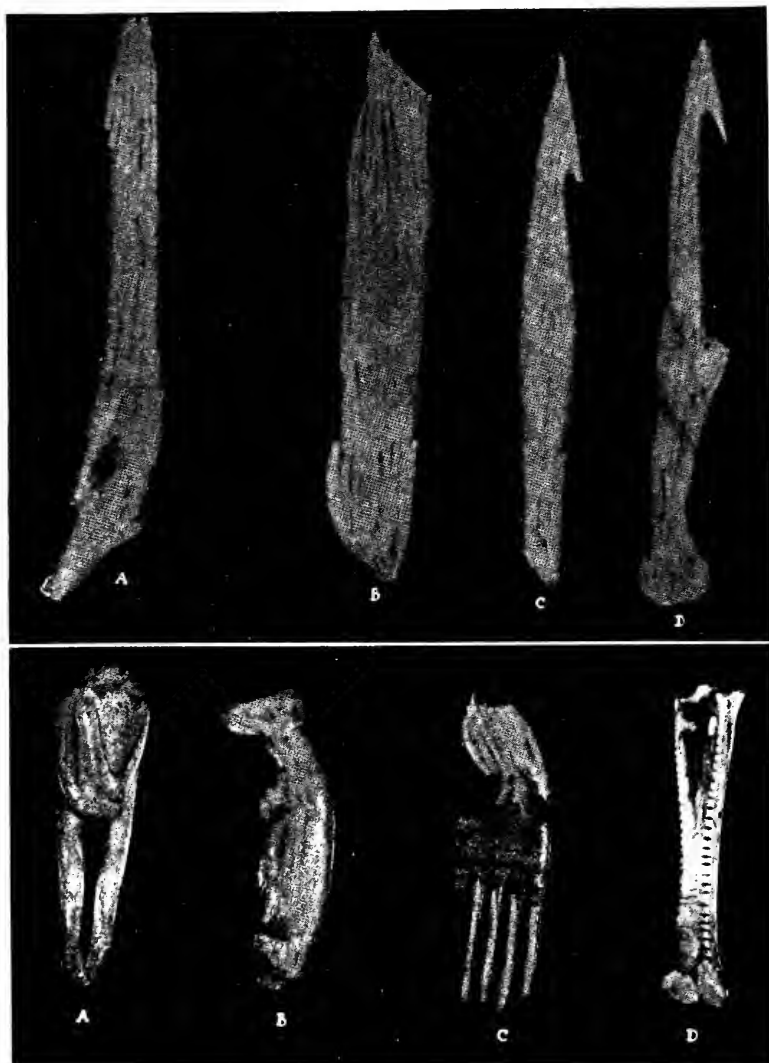
An unusually fine bird effigy comb with its delicate head missing had wings etched on the sides (pl. 115, fig. C).

Two unusually interesting objects of bone are represented in (pl. 115, fig. A) an effigy of a female with her left hand on her right breast, and right hand on abdomen. The head is missing above a large drill hole in the neck from which this charm was probably suspended.

Fig. D, pl. 115, represents a delicate, highly polished piece of rabbit bone notched on four sides and perforated at one end for suspension. The notching may have been purely

SCHULTZ SITE

PLATES (DOWN) 114, 115



OBJECTS MADE OF BONE AND ANTLER

Figure A, (Plate 114), represents a notched antler knife handle. B, a broken harpoon head; C, and D, finished antler harpoon heads.

Figure A, (Plate 115) represents a human figure made of bone. B is probably a bear and C, is part of a comb the upper half representing the body of a bird. Figure D, is a notched rabbit bone, possibly a tally.

decorative or it is possible that it was a tally for recording events or for keeping count of objects its owner possessed.

FISH-HOOKS—Fish-hooks and blanks were plentiful, usually in fragmentary condition. They were more delicate than those from Washington Borough. A small knob had been left on the proximal end of most of them to facilitate the attachment of a line (pl. 116).

SCHULTZ SITE

PLATE 116

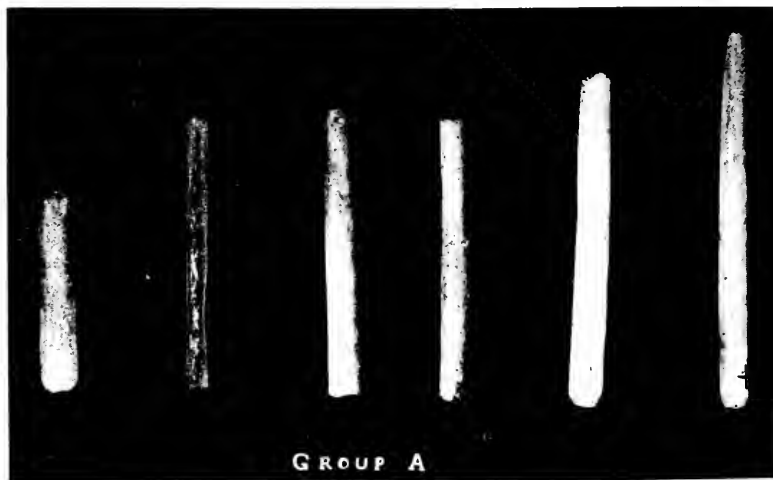


FISH HOOKS AND SECTIONS OF BONE FROM WHICH HOOKS COULD HAVE BEEN MADE

ANTLER OBJECTS—Worked pieces of antler were abundant and hundreds of objects made of this material were recovered. The most interesting were seventy-four polished, blunt pointed plugs or pins. There were three forms and they ranged in size from 2 in. to 5 in. in length. The most common type, of which there were thirty-five specimens, was plain elongated and cylindrical-shaped with slightly beveled and rounded ends (pl. 117). This was followed by twenty-one of a round,

SCHULTZ SITE

PLATE 117



OBJECTS MADE OF ANTLER COMMONLY CALLED PLUGS OR PINS

tapering, elongated, cone type (pl. 118, group B), and sixteen with a definitely worked head on one end (group C).

Mr. M. R. Harrington recovered similar objects on Cherokee sites on the Upper Tennessee River and describes them as follows:

"No implements with which weaving was done appeared during our excavations, or at least, if found, were not recognized as such, but the highly polished bone 'pin' shown in Pl. LXXVIII, A, and some of the implements seen in Pl. LXXV. classed as awls and bodkins, may have had some such use."
(19)

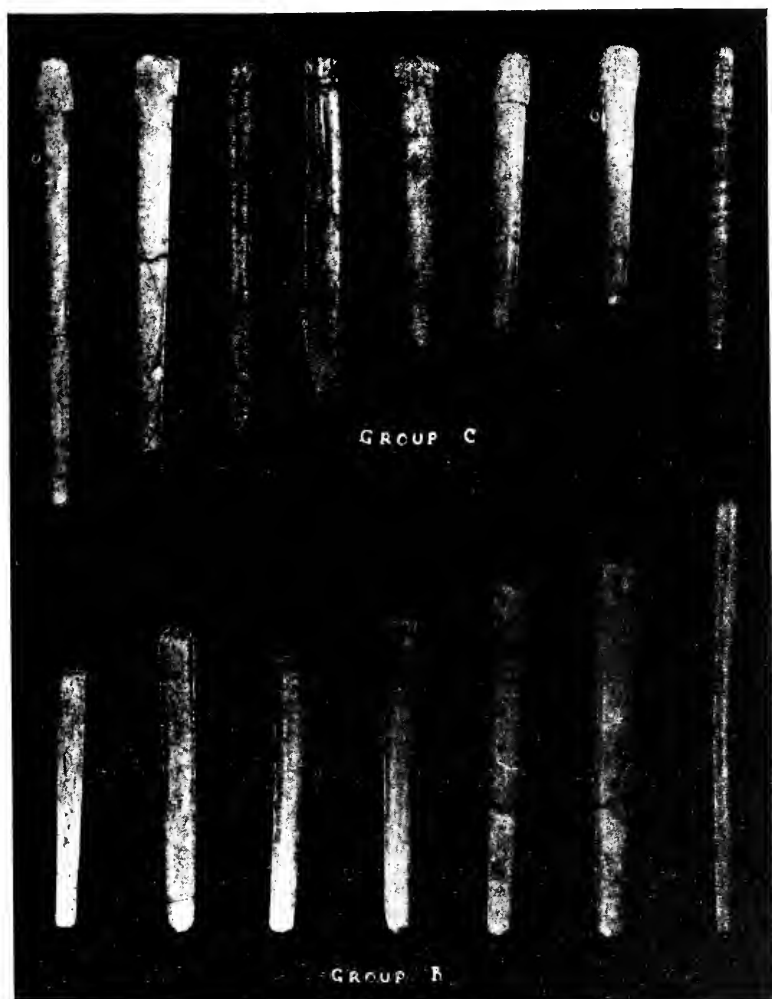
The fact that the Susquehannock did a certain amount of weaving has been verified, and it is possible that these objects were used for that purpose. However, the writer is inclined to believe they were employed as counters in some unknown

game of the Indians. This theory is substantiated by the red paint which still remains on the one represented at the extreme right of Group C, (pl. 118), and also the fact that similar objects are still in use by various tribes in the Canadian northwest as counters, each type representing a certain number.

ARROWPOINTS—The fact that the Susquehannock used antler arrowpoints was well established on the Washington Borough

SCHULTZ SITE

PLATE 118

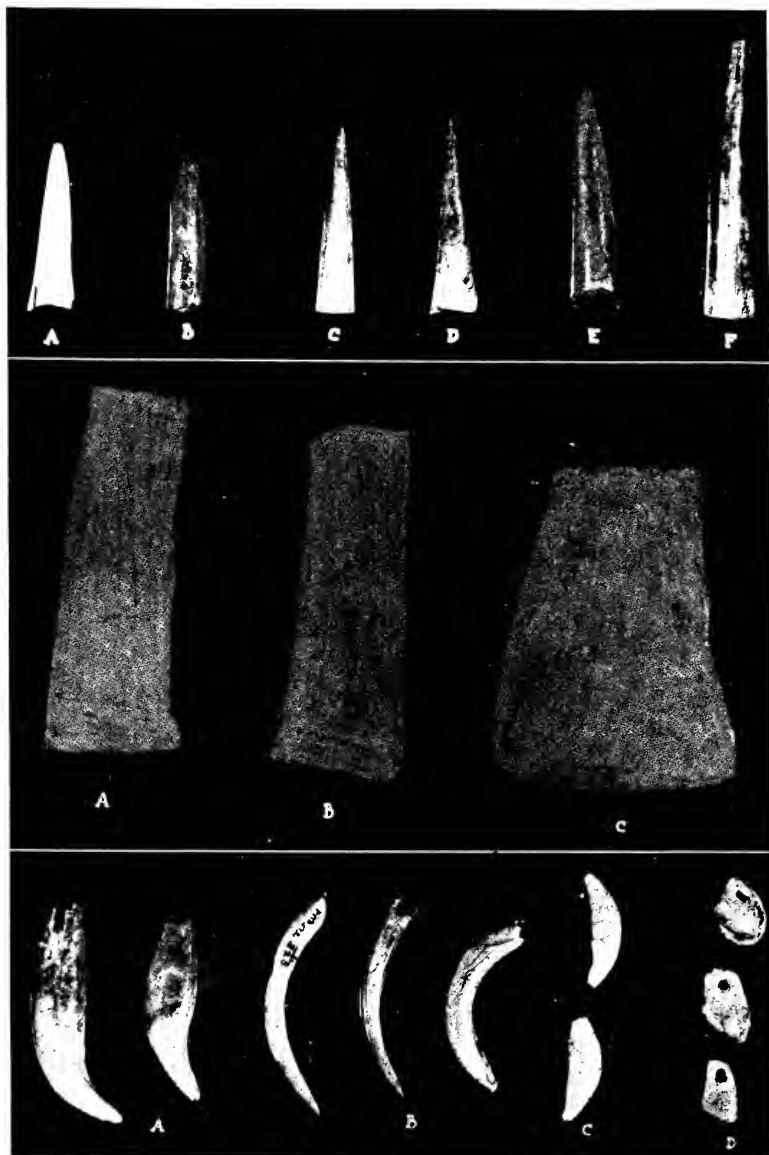


OBJECTS MADE OF ANTLER

These implements may have been used for weaving or as counters in games

SCHULTZ SITE

PLATES (DOWN) 119, 120, 121



ARROWPOINTS MADE OF ANTLER

Objects of antler which may have been used as wrist guards
 Animal teeth used for a variety of purposes. Figure A, represents bear teeth;
 B, beaver teeth; C, dog or wolf teeth; D, elk teeth

village site. It was substantiated on this site where eight complete hollowed points were found (pl. 119). Fig. A was the only tanged point recovered. B, C and D were typical killing points and E and F were "bunts," or stunning arrows. Many points in the process of construction were also recorded together with hundreds of partially worked pieces of antler.

GUARDS—Most Indian tribes had some method of protecting their wrists from their bow-strings. Figs. A and B in (pl. 120) suggest the possible use of antler tablets for this purpose by the Susquehannock.

PIPES—A verification of the use of antler in making smoking pipes was recorded as one unusually fine blank and a fragmentary piece of a stem were found.

The distal end of a much used antler skin scraper is represented in (pl. 120, fig. C). We still find this type in use among most primitive Indian groups and it serves a variety of purposes besides that of scraping skin.

ANIMAL TEETH—The teeth of various animals were employed for utilitarian purposes as well as for decoration. Seventeen beaver incisors were found and probably used with handles as small chisels. Eighteen canine teeth of bears were recorded. One was perforated for suspension and another worked flat on the proximal end (fig. A, pl. 121). Perforated elk teeth, used in necklaces, were common, as well as the canine teeth of dogs and other undetermined animals (figs. B, C, D).

SHELL—A small fragment of a smoothly finished turtle shell bowl was recovered from Pit 12 in Plot 2, and shows excellent workmanship in this material.

ORNAMENTS, BEADS—Contrary to most Iroquois archaeological sites, very few beads made of (*Olivella mutica*) were found. Most of the shell beads were beautifully worked and ranged from small disc-beads less than $\frac{1}{8}$ in. in diameter to $\frac{1}{2}$ in. Discoidal types ranged from $\frac{1}{4}$ in. to $\frac{1}{2}$ in. in diameter and the tubular beads from $\frac{3}{8}$ in. to 1 in. in length. All the beads were of white shell and none of the so-called "wampum" type were found. (see pl. 33).

POTTERY

The pottery recovered from the Schultz Site was mostly fragmentary and in a wide variety of sizes. Several thousand sherds and a few unbroken vessels were recorded. The former were kept isolated according to pits and designs, and an attempt

SCHULTZ SITE

PLATE 124



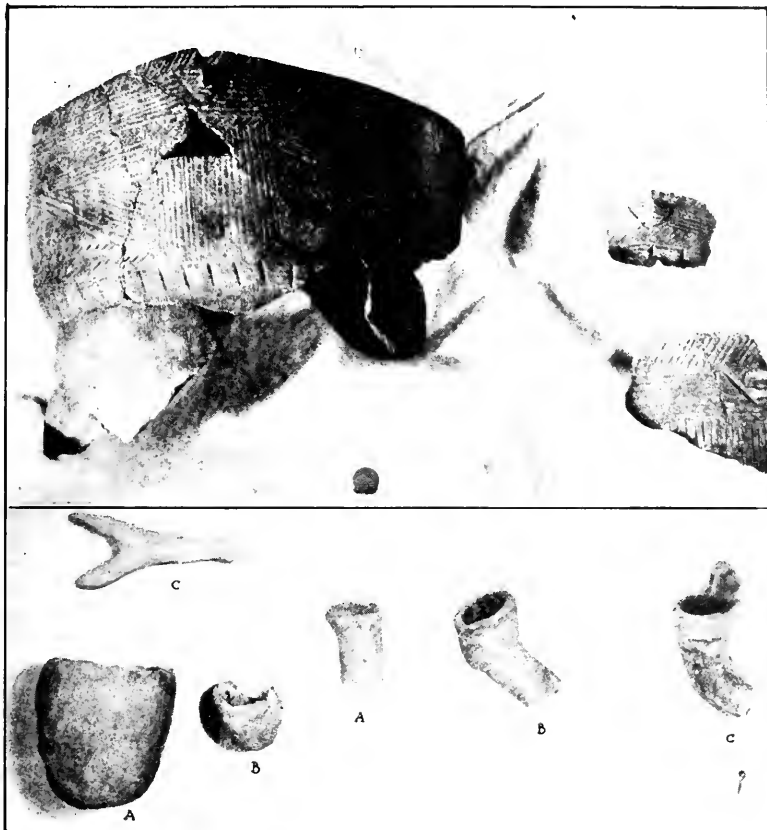
POTTERY VESSELS FROM THE SCHULTZ SITE
(Height: 19½ in.)

is now being made at the State Museum to restore them. Many vessels will probably result from this work. As it will take some time to complete the restoration it is manifestly impossible to hold this report to obtain photographs and study types of completed vessels. A thorough laboratory study has been made of all the sherds and the conclusion reached that most

of the forms from the site were similar to those found at Washington Borough. Large effigy vessels with bold grooved designs were common. One small bowl had the molded figures of two bears' heads on notched opposite projections of

SCHULTZ SITE

PLATES (UPPER) 125, (LOWER) 126, 127



OBJECTS MADE OF EARTHENWARE

Fragments of the Favorite Types of Vessels Found on this Site

Figure A. (Plate 126), represents a small pottery vessel constructed around a corncob. Figure B, a small vessel about the size of a thimble. Figure C, a V-shaped object of clay with a fingerprint upon it.

Smoking pipes of earthenware similar to Cherokee forms recorded from the Tennessee Valley

the rim. The figures faced the inside of the bowl, and the ware was light pink, shell tempered, and unusually heavy averaging from $\frac{1}{4}$ in. to $\frac{5}{8}$ in. in thickness.

The favorite type of large vessel, on this site, had a deep semi-globular collar, with a notched rim and a horizontal and

obtuse alternating groove and punctate design (pl. 124). The notched rim was prevalent and four upper rim projections were preferred (pl. 125).

One small, crude vessel had been constructed around a large corncob and the marks of the corn can be clearly seen on the inside (pl. 126, fig. A).

A small Y-shaped object of earthenware may have been intended to represent a human figure. The whorls of its maker's finger prints were clearly indicated on the red baked clay (pl. 126, fig. C).

CERAMIC REPOSITORY OF THE EASTERN UNITED STATES
REPORT ON SHERDS FROM SITES NEAR SAFE HARBOR, PA.

The group of sherds in the Ceramic Repository are from three different locations, the Schultz Refuse Pit, Pit 200-201, ST. 2, and Pit 202 ST. 2. However, since they appear structurally to be a unit, they will be discussed in that light. Although there are a few pieces which stand out from the group, this collection is quite homogeneous. There are too few sherds present to warrant any general conclusions as to the nature of the entire pottery collection found at these sites, or to determine the position of the collection with reference to related groups.

The tempering material in all but one sherd is finely crushed shell. Most of the sherds have about equal amounts of clay and shell used in their construction. There are a few pieces of grit or sand in the paste, but in general the clay is free from such material. The texture is predominantly medium fine. The hardness of the exterior surface has been measured by the geological scale of hardness (1) and is between 2 and 2.5. Only two sherds were a trifle harder than 2.5. There is a considerable range of surface color, but the predominating shade is a light sandy brown. The interior surface is often blackened by smoke and sometimes appears to have a thin crust of organic material. The color of the paste is a dark grey. The exterior surface is more deeply oxydized than is the interior, as is revealed in the cross-section.

Most of the sherds are rim pieces and the exterior surface finish is so obscured by decoration that it is difficult to determine the method of treatment. Many of the rim surfaces appear to have been smoothed after they had been tooled with

a cord-wrapped paddle. In the few body sherds present, this treatment was quite plain. The interior surface is uniformly smooth.

The designs are made up of combinations of straight, parallel lines. There is not a curved line on any of the sherds. The area occupied by the design is exclusively the outer rim. Four of the sherds bear human faces which were made from a small piece of clay that was added to the vessel after it had been shaped. The face is located just below the lip. The lip in each case bears a small notch above the face. A diagonal line on the left and right side of the face differentiates it from the rest of the design. The nose is rather prominent and the eyes and mouth area are created by means of horizontal incised lines.

The typical design is made up of a series of closely spaced, narrow and shallow, short, right to left slanting, incised lines that are located just below the lip. Immediately below this is a series of horizontal, medium wide, and either shallow or medium deep, incised lines. The rest of the rim is devoted to groups of slanting, horizontal or perpendicular lines arranged in many patterns. The lower edge of the rim is usually incised or impressed with short, perpendicular, or right to left slanting lines.

One small rim sherd with no lip has medium wide and medium deep, widely spaced incised lines. The latter character makes this sherd stand out from the rest. Another unusual sherd has a series of wide, medium deep, incised lines. In each groove at regular intervals, there is a low, transverse ridge. The lines were probably made by an implement with a rounded point, with the stroke being made in short jerks.

The rims are straight and high and bear the designs. The rim edges are raised above the faces and in some cases where faces are not present on the sherds, the rim area is set off from the body by the decoration, and a slight collaring. Only on two sherds is a collar well-developed. The shape of the lip varies considerably. It may be narrowed and rounded, flattened with rounded edges, or merely rounded. Although no complete vessels were studied, the body probably has a rounded base. The lip of most of the sherds is thinner than the rim section, and varies from 3 mm. to 9 mm. with the usual width 5 mm. The rim thickness ranges from 5 to 9 mm.

with the usual width 6 to 7 mm. Where the shoulder is present, it is usually noticeably narrower than the rim and is usually about 4 mm. in width.

Three rim sherds differ from the group in having what has been called "hole tempering." In these sherds the shell particles on the exterior surfaces have disintegrated. This was due perhaps to firing, burial in a particular type of soil, or the influence of both factors. The sherds are similar in all other characteristics to those already discussed.

The affinities of this collection of sherds are with the Iroquoian area to the north. It can, however, be readily differentiated from that group on the basis of general shape. There are a number of vessels figured by Wren which typologically would be classed with this group. Such vessels are No. 2, Pl. IV, found in Carbon County in a rock shelter; No. 1, Pl. VIII, found at Sunbury; No. 1, Pl. X, found on the west branch of the Susquehanna in Clearfield County; No. 2, Pl. XIII, from the banks of the Susquehanna as Sheshequin, in Bradford County; No. 2, Pl. XVIII, location not given; and No. 2, Pl. XX, from Carbon County. W. H. Holmes' (third reference -3) figures on Pl. CXLIV, a group of sherds from Bainbridge, Lancaster County, appear very similar to the group in the Ceramic Repository. Skinner in his *Notes on Iroquois Archaeology*, figures two vessels classified as Andaste that are very similar to those from near Safe Harbor. Other similar pottery groups might be mentioned, but the above cited references seem to have the closest connection with the sherds that are the subject of this report.—JAMES B. GRIFFIN.

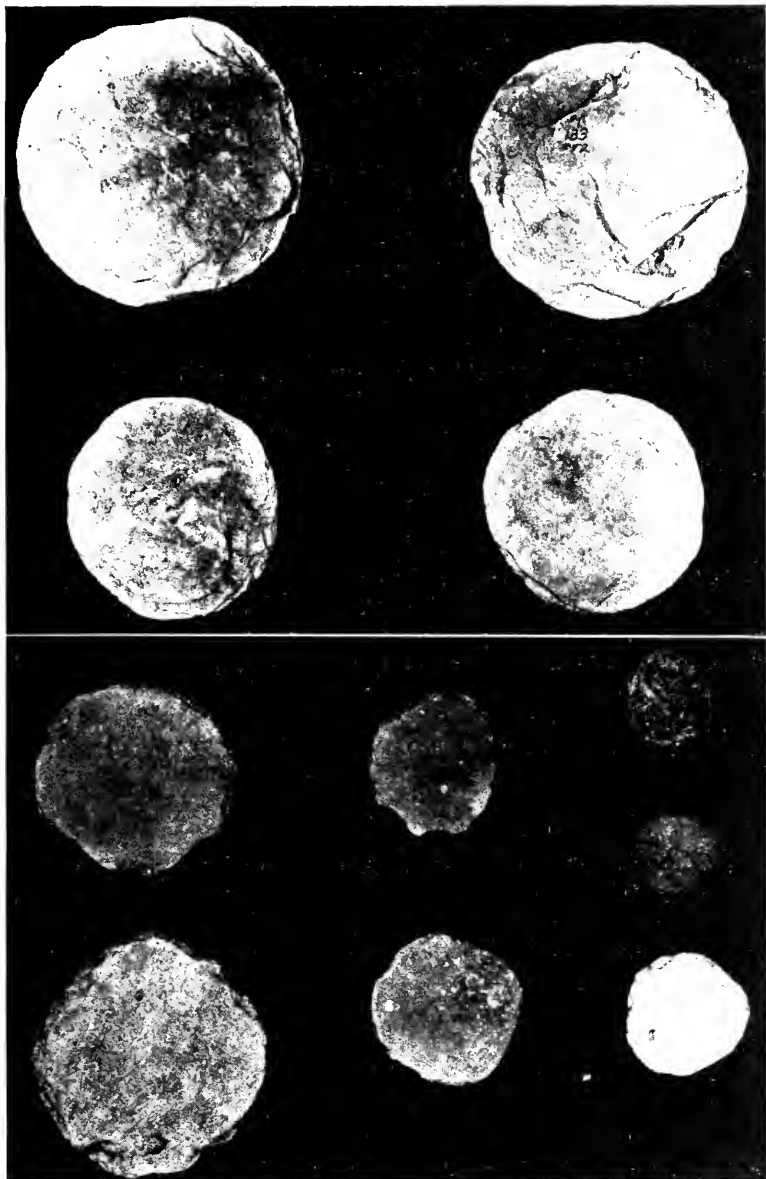
PIPES

Pipes were rare on this site and only two complete earthenware specimens were found (pl. 127). These were small for Susquehannock pipes and had many southern characteristics. Fig. B resembles Cherokee forms recorded by M. R. Harrington from the Tennessee Valley. It had a bulge at the base of the bowl and indications of an overhanging lip were on the top edge where it had been pounded to empty tobacco. Fig. C had four upper projections on the rim of the bowl and contained the tobacco heel left there by its owner.

Thirty fragmentary pipes showed a wide range in style and workmanship. Large broken pipes with crude stems and

SCHULTZ SITE

PLATES 128, 129

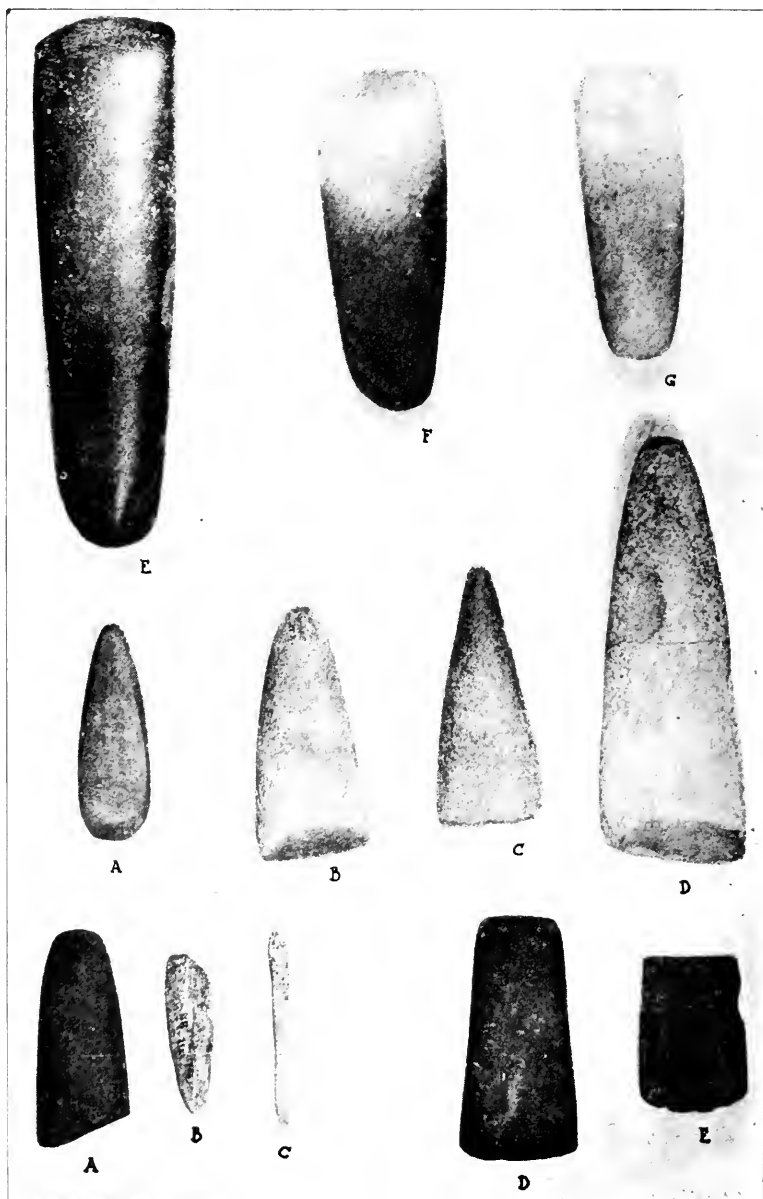


OBJECTS OF STONE PROBABLY USED IN AN ANCIENT GAME CALLED
"CHUNKEY" (See text)

DISC-SHAPED PIECES OF EARTHENWARE PROBABLY USED AS MARKERS IN GAMES

SCHULTZ SITE

PLATES 130, 131



THE CELT FORM OF STONE CUTTING IMPLEMENT WAS THE FAVORITE OF THE ANCIENT SUSQUEHANNOCKS

Figures D, and E, (Plate 131), represent the secondary form of celt recorded on this site

smaller more delicate terra cotta forms were recorded. No stone pipes were found and those made of earthenware were tempered with shell and sand.

GAMES

The Susquehannocks may have had a game similar to the "chunkey" or hoop-and-pole games played by southern Iroquois. Thirteen round flat stones, the largest with a diameter of $5\frac{1}{2}$ in. and the smallest of 4 in., showed evidence of having been rolled upon their edges. They were thinner than the gaming stones described by Harrington from Tennessee (19) and discus shaped (pl. 128).

The "chunkey" game was played by the Cherokee Indians with a stone disc and a pole about 10 ft. long with a crook at one end. The stone was rolled by hand and the object was to slide the pole after the stone in such a way that it would catch it in the crook. The pole was marked and counts were recorded according to where the disc stopped on these marks.

Mooney claims the game was played upon a piece of ground especially prepared for the purpose and called by the early traders a "chunkey yard." (27).

Fourteen flat disc shaped pieces of earthenware in sizes from $\frac{3}{4}$ in. to $2\frac{1}{2}$ in. in diameter may have been used as game counters (pl. 129). It is well known that the Iroquois had dice games which were played with marked fruit pits or stones.

STONE OBJECTS

AXES—The celt form of stone cutting implement was the favorite of the ancient Susquehannocks. Fourteen polished celts, in three types, were recorded, the largest was $10\frac{1}{2}$ in. long and the smallest 4 in. The popular form of which there were six is represented in (pl. 130, figs. A, B, C and D). The material used was a variety of hard fine grained stone of a greenish blue cast similar to local trap-rock. The second form had a rounded proximal end with an elliptical section (pl. 130, figs. E, F, G). The third and smallest form was flat with a rectangular section (pl. 131, figs. D, E).

The celt-type of axe was probably hafted by inserting it within a cone shaped hole on the end of a stout stick. It is a typical

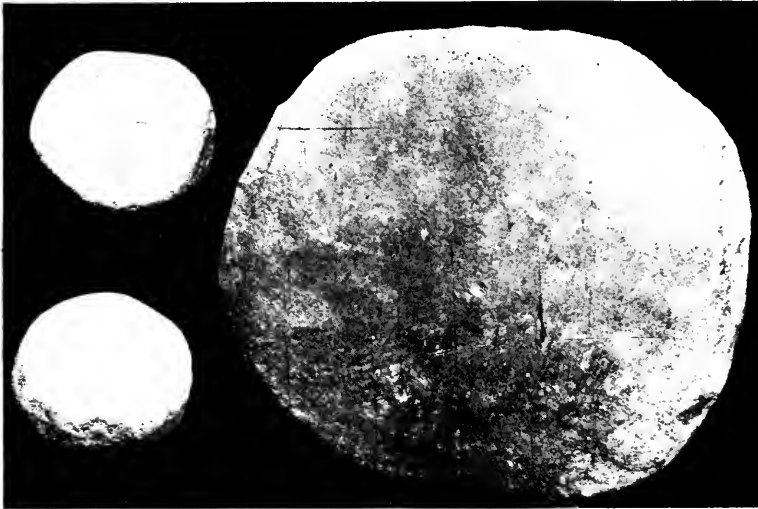
Iroquoian artifact and all forms found were similar to others recorded through their territory.

MULLERS—Mullers in a wide variety of sizes were excavated together with mortars showing long use in grinding (pl. 132).

Crude pestles were common and all were small indicating that the wooden mortar and pestle were in use at the period (pl. 133). Dozens of round pitted hammerstones in many sizes were found (pl. 133).

SCHULTZ SITE

PLATE 132



A STONE MORTAR AND TWO MULLERS PROBABLY USED FOR GRINDING CORN

POTTERY SMOOTHERS—Pottery smoothers made of coarse stone and others of finer grain were recorded (pl. 134, figs. A and E). One so-called "sinew stone with serrated edges (fig. D) and a fragment of a round slate disc upon which small squares had been faintly etched on one side and a V-shaped figure on the other were found in the pits (fig. C).

Several stone objects showed use possibly as gravers (pl. 131). The edges of A and B were polished and fitted into the grooves of some of the large pottery vessels. C was worked on the distal end and could have been employed to make punctate designs upon earthenware.

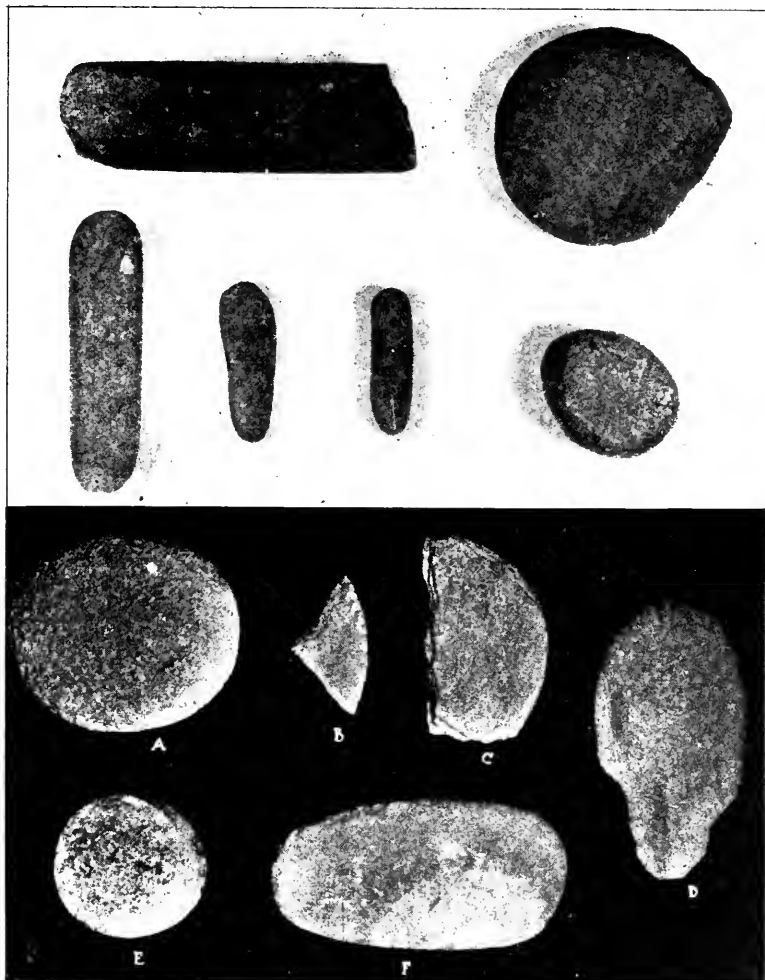
Eleven so-called "pot covers" of a type already discussed

were recovered. They ranged in size from 2 in. to 6 in. in diameter and had the customary niches on the sides (pl. 135).

NET SINKERS—Net sinkers or "bolas stones" in sizes from 2 in. to 4 in. in length were common (pl. 136). They were similar to those found on the Frey Site. Many crudely chipped

SCHULTZ SITE

PLATES (DOWN) 133, 134

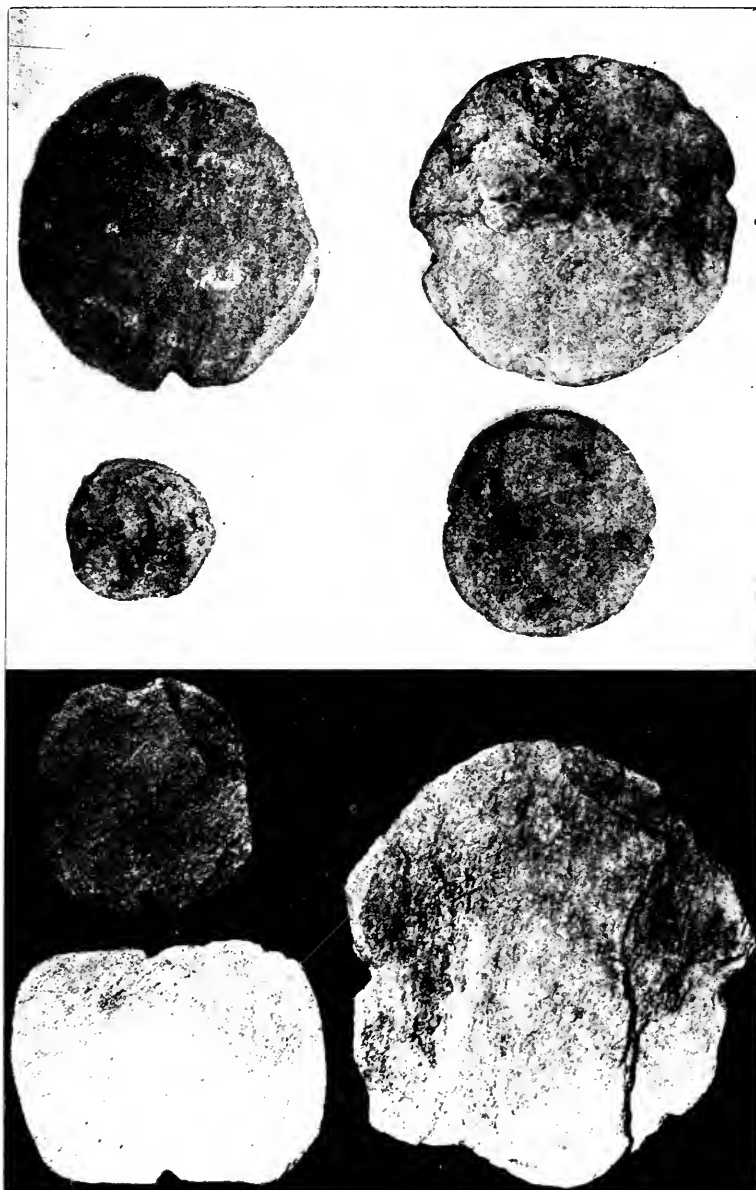


CRUDE PESTLES AND MULLERS WERE FOUND IN ABUNDANCE

Figures A, and E, are stone objects probably used as pottery smoothers. D, is a so-called sincw-stone. Figure C, is made of slate with etching on one side

SCHULTZ SITE

PLATES (DOWN) 135, 136



"POT COVERS" OR OBJECTS OF PROBLEMATIC USE (Above)

NET SINKERS BELIEVED TO HAVE BEEN USED FOR SINKING THE LOWER SIDE
OF A NET IN THE WATER (Below)

stone objects like the five represented in pl. 137 were probably implement blanks or net sinkers.

PAINT—Paint recovered on this site was the same as from Washington Borough. This was often found associated with large lumps of prepared pottery clay.

STEATITE—The only objects made of this material were with Burial No. 2 and the two small dishes are perhaps the most interesting (pl. 138, figs. A, B). Figure C may have

SCHULTZ SITE

PLATE 137



OBJECTS OF STONE. PROBABLY IMPLEMENT BLANKS OR NET SINKERS

SCHULTZ SITE

PLATE 138



OBJECTS MADE OF STEATITE

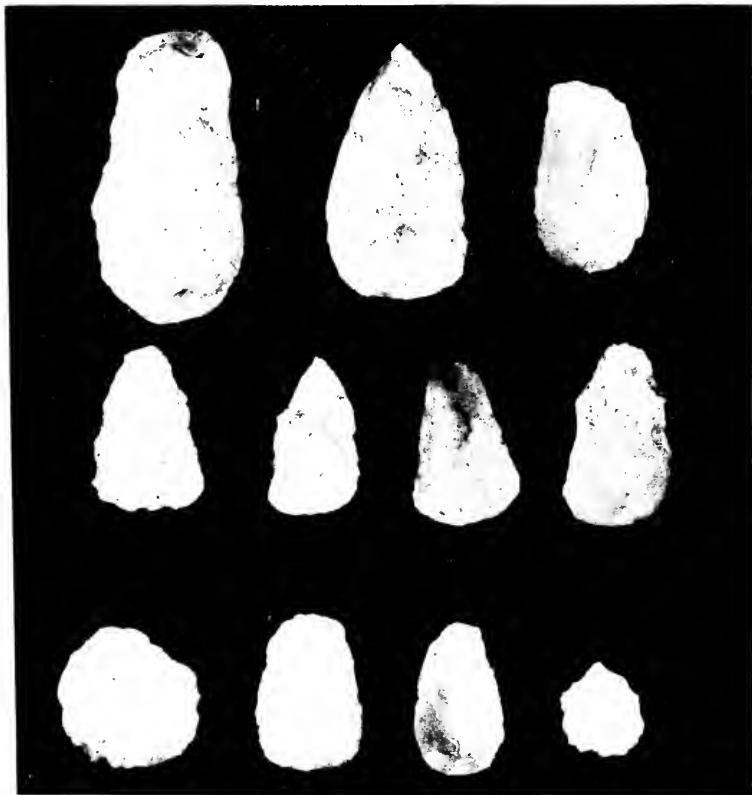
A, and B, represent small dishes. C, and D, were probably pendants.

been intended for an effigy figure of a bird, and D and E were conical shaped pendants.

SCRAPERS—The scrapers made of white quartz were of two types and in a variety of sizes (pl. 139). The common form was triangular shaped and rounded at the distal end. They

SCHULTZ SITE

PLATE 139



SCRAPERS MADE OF WHITE QUARTZITE

were probably attached to handles and used for cleaning hides. The round type is unusual and may have been experimental or used for some unknown purpose.

ARROWPOINTS—Like their linguistic relatives to the north and south the Susquehannocks favored the triangular stone arrowpoint. The stemmed type was also used and several

made of white quartz were recorded in situ (pl. 140). An unusually heavy triangular form was noted but the popular arrowpoint was carefully chipped and delicate.

A variety of friable stone such as white quartz, jasper, basanite, chert, argillite and rhyolite was used for arrowheads with white quartz predominating (pl. 141).

TRADE OBJECTS:—Twenty-five objects indicating contact with white men were recorded. These consisted of one trade

SCHULTZ SITE

PLATE 140



ARROWPOINTS PROBABLY MADE AND USED BY THE SUSQUEHANNOCK INDIANS

SCHULTZ SITE

PLATE 141



SPEAR AND ARROWHEADS MADE OF QUARTZ, BASANITE, CHERT, ARGILLITE, AND RHYOLITE

axe, twenty fragments of iron, a knife blade, a brass jingler, a brass pendant and a tubular bead.

FOOD—A quantity of charred zia maize, beans and many nut shells were found in the deep pits. Meat and fish food was represented in a large collection of animal and fish bones. These bones have been identified by Dr. Edwin H. Colbert, Assistant Curator of Vertebrate Paleontology of the American Museum of Natural History as follows:

Odocoileus virginianus (whitetailed deer)—Cranium

Cervus canadensis (wapiti)—Cranium of male

Cranium of female

mandibular rami

Atlas

Antler

Proximal end of right tibia

Left scapula

Distal end right femur

Euarctos americanus (black bear)—Right mandibular rami

Proximal end of humerus

Procyon Lotor (raccoon)—teeth

Canis familiaris (domestic dog)—jaw

Castor canadensis (beaver)—teeth

SUMMARY AND CONCLUSIONS

THE SCHULTZ SITE was partially contemporaneous with the Washington Borough village site, much larger and in parts older.

Summarizing the results of the explorations, we find the artifacts and field notes indicate a long prehistoric Susquehannock occupation followed by a brief contact with white men.

Physical remains recovered in the village layer were intrusive and so widely scattered and broken by cultivation that metrical study was not practical. All the bones were delicate and some of them may antedate the village.

A numerical analysis of artifacts showed an equal plurality of pottery, stone and bone objects over those of European manufacture. The presence of worked steatite with Burial No. 2, and no place else on the site, emphasizes the burial intrusion.

Artifacts from the pits, lodge floors and general refuse showed no distinctive type or technique outside of that already described. It was not possible to establish cultural elevation strata and the objects recovered were from all levels.

The use of "bell-shaped" pits is not new in eastern archaeology but it was emphasized on this site.

Susquehannock material culture at the period of occupation was clay, bone and stone.

The location plan of the Schultz Site revealed several connecting areas in which no pits or post-holes were observed. (Chart 7). This may indicate a town square or central plaza in which public ceremonies were performed. The fact that a fort or pallisaded village once stood on the spot was fairly well established by the excavations and is partially verified by known historical records.

When Lord Baltimore first ran the northern boundary of Maryland along what he believed was the 40th parallel, he marked the line from the mouth of the Octoraro Creek below Conowingo eastward to the Delaware. Later he established another line well north of this point on the west side of the river above Columbia. This line appears on Herrman's map published in 1672. The legend describes the site as "The Present Susquehannock Indian Fort" and it was on what they thought at the time was the 40th parallel crossing the Delaware River above Philadelphia. In the controversy that fol-

lowed between the Penns and Baltimore depositions were taken of Indian traders and other white men affirming that no forts were known above the Octoraro, and the ancient fort of the Susquehannock was located at this point. It still remains for archaeologists to verify the location and approximate age of this fort.

Undoubtedly the Susquehannocks had several forts along the river. The one on the Schultz site was prehistoric just merging into the historic period and was probably the one upon which the Marylanders should have based their claim in the boundary dispute as it was very close to the real 40th parallel.

In a letter to General John Clark from Mr. Galbraith, dated York, Pennsylvania, 1886, we find the following chapter:

"Six miles north of Conestoga, was still another very ancient stockaded fort which stood upon what is now John W. Witmers land, about midway between Witmers Mill and Strickler's Run, at the foot of Turkey Hill. This was large enough to not only protect the six hundred warriors but the whole population also, bastions were subsequently erected at each of the four corners where small cannon were placed to protect and rake the sides. It is probable that the *fort* at first was a plain parallelogram, and that the bastions were added after implements of civilized warfare were introduced by the Dutch, Swedes and the Marylanders.

"We have no indications, or records of there ever having been a stronghold one mile north of Wrightsville on the *west* side of the river, or do we think such to be the case, for the reason of our having, during the summers of 1884 and 1885, carefully examined the grounds in question and obtained no evidences of its having ever been occupied any length of time by the aborigines, in fact our find was less here than at any point above or below."

Del Isle placed the fort in 1718 under the name of "Canoge, Fort des Indians Andastes ou Susquehannocks," on the York side of the river between Conewago and Codorus Creeks. Archaeological evidence indicates an historic fort directly across the river from Washington Borough on the property of Mr. Oscar Lephart. This may have been the true position of the Herman fort. The objects recorded from this site are late historic, contemporaneous with the Strickler Site, with the exception that the former site contained Jesuit rings and other

objects showing contact with the "Black Fathers" and the latter did not.

In General Clark's notes, published by the Society for Pennsylvania Archaeology, we find the following notation:

"Connadago. Alsops Maryland, 1665.

"This name is assigned to an Indian village site on the east bank of the Susquehanna about four miles below Columbia and fifteen miles below the supposed site of Canoeage as indicated on the Herrman map. It is known locally as Indian town and assigned erroneously to the period of 1680-1700 when the Conestogas resided in that locality. The character of the relics render it barely possible that it was the site of the Susquehannas village in 1660-1663 when aided by the Maryland people with soldiers and cannon. As Herrman in 1670 located the fort on the opposite side and about fifteen miles further up, it is possible that this Connadago may have been an earlier location. The finding of cannon balls, some of iron and others of stone, indicate the use of cannon, even as early as the time of Campanius and the Swedes. The boundary line run in 1685, of which the diagram is found in the papers of the land office at Harrisburg, shows that at that date was found a "Fort Demolished" on this site."*

Further verification of the location of a fort on the Schultz Site is found on page 128 of the same publication.

"In the Land Office at Harrisburg in Book No. 14, entitled 'Old Surveys and Registers of Land Warrants' is a diagram of a survey made in 1685 by Benjamin Chambers pursuant to an order of Thomas Holmes, President of the Council, of a grant made by *Shakahoppok, Secaming, Malebore, Tangoras*, Indian Kings, and five Sacha makers, of lands lying between *Pennapecka*, now called Dublin Creek and Upland Creek and backward to Chesapeake Bay and Susquehanna two days journey. Archives I, 93.

"On this map a direct line is indicated from Philadelphia to a point on the Susquehanna about three miles above the mouth of 'Conestoga' near a spot marked 'Fort Demolished' appears to be the ancient Susquehanna Fort known generally as *Indian Town*, on Witmers Run about four miles below Columbia, and is also known as 'The Blue Rock.' "

*Murray, L. W. Clark Manuscripts, Aboriginal History of the Susquehanna—pp. 62. Athens, 1931.

All evidence appears to warrant the conclusion that the Susquehannocks had at least four Forts on the lower Susquehanna River in what is now Pennsylvania; one on the York County side, one at the present village of Washington Borough, a possible one at Falmouth and an ancient one at Blue Rock on the Schultz farm. The Baltimore, Penn dispute can still be settled by exploring the fort sites in Pennsylvania, and at the mouth of the Octoraro Creek in Maryland. The oldest site with the least evidence of white contact would indicate what was intended to be the true line.

GENERAL CONCLUSION

The remains found on the archaeological sites examined in Lancaster County show the region was inhabited at one time by two groups of Indians—Algonkians and Iroquois.

One small Algonkian site was explored at Shenk's Ferry and the objects recovered conform with established eastern prehistoric criteria especially in pottery and pipe forms. The fact that this group had contacted people of an Iroquoian culture was indicated by Algonkian pottery with stone filler, pointed bottoms and crude Iroquoian type collars.

Five Susquehannock sites were investigated. The oldest was on the Schultz farm and the most recent on the Strickler property. The material culture of the Susquehannock previous to their contact with white men, and well after, possessed many features in common with that of the Southern and Northern Iroquois.

There is no question but what the Algonkians made a cultural impression on the Susquehannocks before they reached Pennsylvania and after they settled on the river. To what extent their somatology was effected by contact with certain Algonkians is still to be determined. The well known fact that many captives were adopted into Iroquoian tribes would further a fusion of the two physical types. The early contact of the Susquehannocks with white men was the beginning of a transitional period into which they were well advanced on the Strickler site. This was less marked on the Washington Borough sites and negligible on the Schultz site.

On the late sites the artifacts, such as the terra cotta pipe forms, showed northern Iroquois influence. The earlier sites upon which were found "chunkey" stones, pot covers, white

quartz arrowpoints, rim lip pipes and celts suggested Cherokee influence, and indicated a closer contact with the southern Iroquois in this epoch.

The geographical position of the Susquehannock would facilitate the relationship with their blood kin to the south. Their invasion of what is now the soil of Pennsylvania and their battles with their relatives to the north resulted in their final extermination.

NOTES

- (1) BRINTON, D. G.
The Lenape and Their Legends. Philadelphia, 1885.
- (2) HECKWELDER, J.
The Indian Nations, Philadelphia, 1876.
- (3) LOSKEIL, GEORGE HENRY
History of the Mission of the United Brethren Among the Indians of North America. London, 1794.
- (4) CLARK, GENERAL JOHN
Personal Notes, Auburn Theological Seminary Library. Auburn, New York.
- (5) PARKER, A. C.
Archaeological History of New York. Albany, 1920.
- (6) MCSHERRY, WM.
Relations Itineris in Marylandiam, Narrative of a Voyage of Maryland. 1799-1839.
- (7) MURRAY, L. W.
Selected Manuscripts of General John S. Clark, Relating to the Aboriginal History of the Susquehanna. Athens, Pa., 1931.
- (8) SPECK, F. G.
Papers of Historical Society of Delaware. p. 75, 1927.
- (9) CONESTOGA
Bulletin 30 B. A. E., p. 336.

- (10) SMITH, JOHN
The True Travels, Adventures and Observations of
Captaine John Smith. Vol. I, Richmond 1819.
- (11) CHAMPLAIN, SAMUEL de
Voyages de la Nouvelle France, 1615, 1632. Prince
Society, Boston, 1878-82.
- (12) DOC. COL. HISTORY N. Y.
I, 14, 1854
- (13) DOC. COL. HISTORY N. Y.
1650, IV 22
- (14) JESUIT RELATIONS, 1637, p. 158.
- (15) HOHN, THOMAS CAMPANIUS
Description of the Province of New Sweden, now
called by the English, Pennsylvania, in America.
Philadelphia, 1834.
- (16) FOUNDERS OF MARYLAND, p. 3.
- (17) STREETER, S. F.
The Fall of the Susquehannocks, Historical Magazine,
March, 1857.
- (18) COLDEN, CADWALLADER
The History of the Five Nations of Canada. London,
1747.
- (19) HARRINGTON, M. R.
Cherokee and Earlier Remains on the Upper Ten-
nessee River. Museum American Indian, New York,
1922.
- (20) HENNEPIN, LOUIS
Description de la Louisiane nouvellement de couverte
au soneluest de la Nouvelle France. Paris, 1683.
- (21) ALSOP, GEORGE
A Character of the Province of Maryland. London,
1666.
- (22) Butel-Dumont, Georges Maru
Memories historiques sur la Louisiane. Tom II, 1753.

-
- (23) BEAUCHAMP, WILLIAM B.
Earthenware of the New York Aborigines. Albany,
1898.
- (24) WREN, CHRISTOPHER
A Study of North Appalachian Indian Pottery.
Wyoming Historical and Geological Society. Wilkes-
Barre, 1913.
- (25) SKINNER, A. B.
Notes on Iroquois Archaeology. Museum American
Indian, Heye Foundation. New York, 1921, Plate X.
- (26) ORCHARD, WILLIAM
Beads and Beadwork of the American Indians.
Museum American Indian, Heye Foundation. New
York, 1929.
- (27) HODGE, F. W.
Handbook of American Indians. Bulletin 20, Bureau
of American Ethnology.
- (28) BUSHNELL, D. I.
Tribal Migrations East of the Mississippi. Vol. 89,
No. 12, Smithsonian Misc. Coll. Washington—
1934.
- (29) MICHELSON, TRUMAN
The Linguistic Classification of Powhatan. Amer.
Anthrop., Vol. 35, No. 3, July-August, 1933.

INDEX I

SAFE HARBOR REPORT NO. I

PETROGLYPHS IN THE SUSQUEHANNA RIVER NEAR SAFE HARBOR

A.

- Aldred, J. E., 7.
 Alphabetic Symbols, 17.
 Ancient Writings, 16.
 Animals, 39, 47.
 Archaeological Survey Map, Plate I.
- Authorities consulted:
- American Anthropological Journal, 47.
 - American Antiquarian, 53.
 - American Indian Series, 53.
 - Animal Figures in American Art, 53.
 - Annual Report Bureau Ethnology, 52.
 - Anthropological Institute, 53.
 - Armstrong, P. A., 53.
 - Basser, H. T., 53.
 - Boas, Franz, 53.
 - Brinton, D. G., 52.
 - Bruff, J. G., 53.
 - Bushnell, David I., Jr., 53.
 - Cadzow, Donald A., 52.
 - Chinese Scholars, 18, 28.
 - Clodd, Edward, 53.
 - Collins, Henry R., Jr., 54.
 - Copway, 54.
 - Davis, Robert H., 54.
 - Delaharrie, Edmund Burke, 54.
 - Emerson, Ellen Russell, 54.
 - Engerrand, G., 54.
 - English, Tom, 54.
 - Fascinating Symbolisms of Beads, 54.
 - Final Report Ohio Centennial, 53.
 - Free, E. E., 54.
 - Gardner, G. A., 54.
 - Gloucester Co. Hist. Society, 33.
 - Green, Edward, 54.
 - Grotefend, 17.
 - Harrington, M. R., 53, 55.
 - Hatt, Gudmund, 55.
 - Heckewelder, Rev. John, 52.
 - Hodge, Zahrah Preble, 55.
 - Hoffman, Walter James, 35, 55, 52.
 - Holden, Edward Singleton, 55.
 - Holmes, William H., 55.
 - Jomard, 55.
 - Keane, A. H., 55.
 - Kingsborough, 55.
 - Krickeberg, Walter, 55.
 - Lenormant, 56.
 - Lewis, Theodore Hayes, 56.
 - Loskiel, G. H., 52.
 - Maccurdy, George Grant, 56.
 - Mallery, Garrick, 34, 35, 52.
 - Mason, William A., 56.
 - Mercer, Henry Chapman, 56.
 - Museum Journal, 56.
 - Olbrechts, Frans M., 56.
 - Parker, Dr. Arthur C., 34.
 - Parry, Francis, 57.
 - Petroglyphs, 55.
 - Pictographs, 57.
 - Putnam, F. W., 57.
 - School Arts Magazine, 57.
 - School Craft, 57.
 - Smith, Harlan I., 57, 29.
 - Smith, Victor J., 57.
 - Speck, Frank G., 58.
 - Starr, Frederick, 58.
 - Stewart, F. H., 58.
 - Strong and Egbert, 58.
 - Symbolism and Totem System, 58.
 - Talmadge, James B., 58.
 - Thevenin, Rene and Coze, Paul, 58.
 - Tooker, William Wallace, 58.
 - Traditional Art of the American Indian, 58.
 - Utzinger, Rudolf, 58.
 - Wardle, H. Newell, 58.
 - Westlake, Inez B., 59.
 - Winchell, N. H., 59.
 - Wright, William, 53.
- Quoted:
- Andree, Dr. Richard, 6.
 - Beatty, 40.
 - Fisher, George, 50.
 - Frazer, Jr., P., 9, 37.
 - Grotefend, 17.
 - Harrington, M. R., 47.
 - Heckewelder, Rev. John, 39, 46.
 - Hoffman, Dr. W. J., 9, 35, 50.
 - Landis, David, 10.
 - Lewis, Clifford M., 50.

- Loskiel, 36.
 Mallery, Garrick, 34, 35, 52.
 Parker, Dr. Arthur C., 34.
 Porter, Prof., 41.
 Raffinesque-Schmaltz, C. S., 36.
 Salisbury, Dr. J., 47.
 Smith, H. I., 29.
 Stewart, Julian H., 28, 52.
 Tannah, 40.
 Walton, Dr. J., 47.
- B.
- Bortner, Roland, 7.
 Burns, S., 7.
- C.
- Charting Pictographs, Plate VII.
 Clarke, Charles E., 7.
 Coal Deposits, 12.
 Conestoga Creek, 10.
 Conowingo, 7.
 Creswell Rock, 15, 28, 29.
 Station, 15.
 Writings, 29.
 Cypriote, Art, 17.
- D.
- Deisher, Henry K., 11.
 Dorrance, Frances, 7, 10.
 Drawings of Porters Petrographs, 42.
 Drilling Rocks, 14.
 Duncan, Linneaus G., 11, 12, Plate VIII.
- F.
- Foreword, 5.
 Francis Farm, 46, 51.
 Funk, John, 11, 13.
- G.
- Gardner, Eugene M., 11.
 Godcharles, Frederic A. G., 7.
- H.
- Herr, Elvin, 14.
 Holtwood, 7, 13.
 Horns, 40.
 House, William, 14.
 Human Head, 40.
- I.
- Ideograms, 16, 39.
 Indian Motor Company, 12.
 Indians:
 Algonkian, 7, 9, 11, 33, 34, 35, 36, 41, 44, 45, 46, 47, 50, 51.
 American, 6.
 Arikara, 18.
 Bunji, 39, 40, 46.
 Chippewa, 46, 50, 51.
 Delaware, 36, 46.
 Hidatsa, 18.
 Iroquois, 33, 35, 44, 45, 47.
 Lenape, 36, 39, 44, 46, 47, 51.
 Mandan, 18.
 Mingoes, 46.
 Ojibway, 18, 35, 36, 37, 40, 41.
 Pueblo, 7, 37.
 Salish, 29.
 Shawnos, 46.
 Siouan, 7.
 Turkey, 39.
 Turtle, 39.
 Unalachtigo, 39, 46.
 Unami, 46, 47.
 Wolf, 39, 40, 41.
 Wyandots, 47.
- Interpretations: of symbols:
- Animal groups, 39.
 Animals, 39, 47.
 Bear, 38, 39, 40, 47.
 Beggar, 38.
 Bird, 41, 47.
 Buffalo, 39, 40.
 Cache, 38.
 Composite Groups, 40.
 Concentric Circles, 38.
 Deer, 39.
 Dish, 38.
 Dog, 16, 39, 40.
 Dove of Peace, 43.
 Eagle, 41.
 Earth Mother, 40.
 Elk, 39.
 Food, 40.
 Footmark, 39.
 Great Spirit, 38.
 Hermit, 38.
 Horned Being, 40.
 Human, 38, 40, 42.
 Hunter, 40, 42.
 Latin Characters, 16.
 Medicine, 40.
 Mighty Hunter, 40, 41.
 Monster, 51.
 Otter, 39, Plate XVII, 51.
 Panther, 39, Plate XVII, 51.
 Reptile, 41, 42, 47.
 Snake, 41, 42, 47.
 Spiritual Animals, 51.
 Totem, 39.
 Thunderbird, 38, 41, 47, 50.

- Tracks, 38, 39, 40, 41, 43, 44, 47, 51.
 Turtle, 42, 47.
- Islands:
 Big, 12.
 House, 12, Landis, David H., 7, 10.
 Neff, 10.
 Walnut, 10, Plate II, III, 12; Plate V, 13, 14, 15, 16, 17, 18, 28; Plate X, XI, 44.
- J.
- Johnson, Sir William, 33.
- L.
- Landis, David H., 7, 10.
 Linnaean Society, 41.
- M.
- Midewin Society, 6, 36, 50.
 Monaghan, E. J., 7.
 Musser, John, 10.
 Museum, State, 11, 13, 14.
- O.
- Oriental Writings, 44.
- P.
- Parker, Dr. Arthur C., 7, 11, 35.
 Pennypacker, Samuel, 7.
 Petroglyphs Plates II, IV, VII.
 Phonograms, 16.
 Picture Rocks, 6, Plates XVI, XVII, XVIII, XIX.
 Picture Writing, 6, 9.
 Plaster Molds Plate A, 12.
- R.
- Rock:
 Big Indian, 9, 10, Plate II, 13, 15, 18, 32, 33, 34, 35, 46, 47.
 Creswell, 28, 29.
 Indian God, 48, 49, 50.
 Little Indian, 9, 10, Plate III, VII, 13, 15, 18, 30, 34, 35, 38, 42, 46, 47.
- S.
- Safe Harbor, 7, Plate I, 9, 10, 11, 12, 13, 14, 15, 16, 17, 35, 37, 45.
 Scale Model, Plate VIII.
 Settar, George, 7.
 Shaman, 40.
 Shenk's Ferry, 35.
 Siebert, Frank Thomas, 7.
 State Museum, 11, 13, 14.
 Sugar Grove, Plates XVIII, XIX.
 Steinmetz, R. C., 7.
 Stoudt, John Joseph, 7.
- T.
- Treaty, Indian, 33.
- V.
- Vandalism, 9, 43.
- W.
- Wall, J. S., 50.
 Walls, John A., 7.
 Walum, Olam, 36, 47.
 Washington Borough, 7, 11, 12.
 Whitney, H. E., 7.
- Y.
- York County, 12.
- Z.
- Zoomorphic Characters, 16, 34, 37.

INDEX II

ARCHAEOLOGICAL STUDIES OF THE SUSQUEHANNOCK INDIANS OF PENNSYLVANIA

SAFE HARBOR REPORT NO. 2

- A.
- Abnauquoriois, 23.
 Acid, chromic, 127.
 Adornment, color, 85.
 Africa, 131.
 Agneronnons, 23.
 Agniehenon (Mohawks), 20.
 Algonkian, culture, 61.
 Algonkian, groups, 96.
 Algonkian, horizon, 81.
 Algonkian, sites, 52.
 Algonkian tribes, 12, 19.
 Allen, Capt. John, 29.
 Alligewi (Talligewi), 13.
 Alquanachuck, 17.
 Alsop, George, 95, 123, 203.
 American Anthropological Association, 5.
 Andaste, appearance of, 37.
 Andastes, 12, 13, 14, 16, 19, 27, 109, 134, 190, 202.
 Andastoe, 22.
 Andastoerhonon, 20.
 Andastoghernons, 16.
 Ann Arbor, Michigan, 139.
 Anons, 20.
 Anthropometric, study, 47.
 Antler, objects, description of, 73, 145, 170.
 Antler, use of, 57, 182.
 Antler, workers, 121.
 Argillite, 199.
 Armor, gorget, 89.
 Arrowhead, making, 118.
 Arrowheads, antler, 57, 147.
 Arrowheads, bunt, 147.
 Arrowpoint, location of, 45, 47.
 Arrowpoints, 43, 59, 71, 81, 133, 148, 157, 205.
 Arrowpoints, description of, 183, 198.
 Arrowpoints, in pits, 54-56.
 Arrows, 96.
 Arrows, stunning, 148, 185.
 Art, bone working, 152.
 Art, potters, 104, 114.
 Art, stone working, 58.
 Asia, trade, 131.
 Athens, 19, 109, 151, 203.
 Atlantic Coast, 12.
 Attaock, 18.
 Auroghtergh, 22.
 Awls, bone, 135.
 Awls, classification, 171.
 Awls, description of, 170.
 Awls, iron, 151, 171.
 Axe, iron, 65, 66, 68, 72, 103, 128.
 Axe, stone, 81.
 Axes, stone, description of, 151, 193.
- B.
- Bacon, Nathaniel, 34, 35.
 Bainbridge, 190.
 Baldwin, 13.
 Balls, rifle, 70.
 Baltimore, 202, 204.
 Baltimore, Lord, 36, 201.
 Bands, bead, 130.
 Bannerstone, intrusive, 81, 118, 151.
 Bark, 73, 127, 160.
 Bark, pieces of, 73.
 Bartmann, 92.
 Basanite, 199.
 Basket, makers, 127.
 Bastions, 202.
 Bead, Cornaline d'Aleppo, 130.
 Bead, glass, 65, 66, 67, 73, 92, 97, 103.
 Bead, making, 83.
 Bead, star, 131.
 Beads, 68.
 Beads, bone, 179.
 Beads, bugle, 132.
 Beads, cheveron, 131.
 Beads, description of, 57, 128, 177, 185.
 Beads, metal, 132.
 Beads, shell, 51, 58, 65.
 Beads, tubular, 83, 87, 199.
 Beads, types, 129.
 Beads, Venice, 132.
 Beans, 128, 199.
 Beans, charred, 59.
 Beans, in pits, 54-56.
 Beauchamp, William M., 12, 106.
 Beaver Creek, 13.
 Bellermine, Cardinal, 91.
 Bellermine, jug, 64.
 Bellermines, 92.
 Bells, brass, 126.
 Bells, hawk, 67.
 Belt, hide, 87.
 Belts, wampum, 25.

- Bench mark, location of, 156.
 Berkley, Governor, 34.
 Birds, effigies, 123.
 Birds, taking of, 149.
 Blanket, trade, 67.
 Blue Rock, 156, 203, 204.
 Bodkins, 182.
 Bohemia, 132.
 Bolas, stones, 195.
 Bone, 201.
 Bone, animal, 41.
 Bone, description of, 145, 170.
 Bone, objects, description of, 73.
 Bones, calcined, 41.
 Bones, fish, 72.
 Bottles, rum, 66, 92.
 Bowl, wood, 64.
 Bowls, 77, 106, 127.
 Bows, 96.
 Box, cap, 70.
 Box, metal, 72.
 Box, snuff, 87.
 Bracelets, 65.
 Bracelets, bead, 130.
 Bracelets, iron, 68.
 Bracelets, rolled, 87.
 Bracelets, wire, 66.
 Brachycephalic, 61.
 Brachycephalic, index, 51.
 Bradford County, 190.
 Brass, 59, 101, 126, 127, 135, 151.
 Brass, necklace, 103.
 Brass, ornament, 115.
 Brent, 21.
 Brinton, 9, 15.
 Brule, Etienne, 19.
 Buckskin, 73.
 Bullet, mold, 99.
 Bullets, 70.
 Bullets, lead, 99.
 Burial, bundle, 66, 99, 101, 103.
 Burials, description of, 44.

 C.
 California, 130.
 Calvert, Lord, 20.
 Campanius, 203.
 Canada, 12, 14, 16, 17, 131, 183.
 Cannon, 21, 32, 202, 203.
 Canoe, 202, 203.
 Capitanessis, 17.
 Captives, 24.
 Carantouan, 10, 16, 19, 21, 133.
 Carantouan, extermination of, 134.
 Carbon County, 190.
 Carolina, North, 11.
 Carte Figurative, 19.
 Cat-Nation, 14.
 Cayuga, 12, 23, 25, 133.
 Cepowig, 18.
 Celt, form, 193.
 Celt, stone, 118, 121.
 Celts, 41, 205.
 Celts, description of, 151.
 Celts, in pits, 54-56.
 Ceramic Laboratory, 190.
 Ceramic Repository, 139.
 Ceramic Repository, report of, 188.
 Ceramics, 152.
 Ceremonial, 105.
 Ceremonial, pottery, 113.
 Ceremonies, 123, 201.
 Ceremony, death, 94.
 Chambers, Benjamin, 203.
 Champlain, 14, 17, 19.
 Charm, 179.
 Chemicals, in fertilizer, 73.
 Chemung (footnote), 24.
 Cherokees, 11, 12, 13, 78, 83, 96, 133, 151, 182, 190, 193, 205.
 Chert, use of, 117, 199.
 Chesapeake Bay, 12, 17, 18, 20, 96, 134, 203.
 Chiefs, 28, 29, 31, 32, 33.
 Chiefs, murder of, 34.
 Children, 148.
 Chips, flint, 118.
 Chips, flint, occurrence of, 40.
 Chisels, 67, 185.
 Choesapeake, Chesapeake, 96.
 Chunky, 151, 193, 204.
 Choptank River, 20, 22.
 Clark, General John S., 13, 16, 93, 202, 203.
 Clay, 65, 73, 85, 121, 105, 133, 188, 197, 201.
 Clearfield County, 190.
 Cloth, 69, 73.
 Cocheaton (footnote), 24.
 Codorus Creek, 202.
 Coil, construction, 60.
 Coiling, 104.
 Coin, 73.
 Colbert, Edwin H., 199.
 Colden, captives, 37.
 Collins, G. N., 128.
 Coloring, pottery, 74.
 Colors, 85.
 Cologne, 91.
 Colonies, Seaboard, 23.
 Columbia, 24, 201, 203.
 Comb, antler, 122, 152.
 Comb, pot, 123.
 Combs, 58, 76, 121, 127, 145, 179.
 Conceptions, savage, 37.
 Confederacy, 18.
 Confederation, 14, 23.
 Conestoga, 16, 202, 203.
 Conestoga Creek, 40.
 Conestogas, Kanastoge, 37.
 Conestoga Township, 43.

Conestoga Valley, 40.
 Conewago, 18, 24, 202.
 Connadago, 96, 203.
 Congo, beads exported to, 131.
 Conojohla, 152.
 Conowingo, 18, 201.
 Conoy, 15, 20.
 Copper, 71.
 Copper, carbonate, 85.
 Copper, subcarbonate, 85.
 Copper, verdigris, 67.
 Corn, 62, 96.
 Cornwallis, 21.
 Counters, 182, 183.
 Cultivation, 159.
 Cultural periods, 10.
 Culture, material, 12.
 Cup, iron, 66.
 Cup, pottery, 65.
 Cup, turtle shell, 50.
 Cups, 106.
 Curles, Bacon's residence, 35.
 Cree Indians, 16.
 Creswell, station, 63.
 Criteria, authentic, 39.
 Crockery, 73, 91.
 Czechoslovakia, beads from, 132.

D.

Dances, 95.
 Decoration, pipe, 157.
 Decoration, pottery, 60, 76, 113.
 Decoration, shell, 82.
 Deer, bones, in pits, 54-56.
 Deformations, noted, 48, 49, 50.
 De Isle, 202.
 Deity, 123.
 deLamberville, John, 25.
 Delaware, 9, 10, 11, 12, 13, 15, 16, 21, 201.
 Delaware Bay, 19.
 Delaware River, 9, 10, 20, 201.
 Delaware Valley, 9.
 Delphos, Oracle, 124.
 Department, agriculture, 128.
 Detroit, 94.
 Devil, 124, 125.
 Devils, horned, 123.
 De-Vries, 19.
 Design, 139.
 Design, comb, 123.
 Design, pottery, 104, 110, 186, 188, 189.
 Discs, 67.
 Dolichocephalic, index, 49, 50, 52, 61, 155.
 Dog, pipe, 78.
 Donehoo, Dr. George P., 11.
 Dublin Creek, 203.
 Dutch, 16, 91, 92, 132.
 Dutch, prisoner, 37.
 Dumont, Butel, 104, 105.
 Dwelling, 41.
 Dwight, John, 91.

E.

Earthenware, pipes, 81.
 Effigy, 67, 77, 115, 125, 152, 179, 187.
 Eishelman, David, property of, 43.
 Elk River, 22.
 Embassy, 22.
 England, 91.
 English, 9, 15, 17, 21, 34, 92, 95, 96, 131, 132.
 Erie, Lake, 12, 14, 37.
 Eskimo, 179.
 European, 60, 201.
 Expedition, Bacon's, 36.

F.

Fabric, 88, 127.
 Faces, human, 111.
 Factory, 92.
 Falmouth, 18.
 Family, dead, 95.
 Famine, 26.
 Farmers, 62.
 Fathers, Black, 23, 25.
 Feasts, 26, 95.
 Federation of Historical Societies, 5.
 Fenstermacher, Gerald, 63.
 Figures, human, 111, 122.
 Figurines, 107.
 Fisher, Governor, 5.
 Fish-hooks, description of, 181.
 Fish-hooks, in pits, 54-56.
 Fireplaces, 160.
 Firestones, in pits, 54-56.
 Five Nations, 10, 11, 12, 13, 14, 16, 19, 22, 23, 25, 26, 37, 133, 134.
 Flint, gun, 70, 72, 81.
 Floods, Susquehanna River, 39.
 Florida, 19.
 Fort, 21, 24, 27, 29, 33, 35, 36, 156, 201, 202, 204.
 Fort Demolished, 203.
 Food, meat, fish, 199.
 French, 11, 16, 17, 19, 22, 131, 132.
 French, inventories, 92.
 Frey, Heast, 135, 153.
 Frechen, 91.
 Frontiers, 26.
 Fugitives, 33.
 Fulham, 91.
 Funk, Mr. John, 97.

G.

Galbrith, Mr., 202.
 Galena, 73.

- Games, description of, 95, 145,
 179, 193.
 Gandastogues, 16.
 Garrisons, 35.
 General Assembly, 5.
 Georgia, 11.
 German, 91, 92.
 Girdle, 73, 126, 157.
 Glass, description of, 68, 91.
 Glass, Roman, 131.
 Godcharles, Captain Frederic A.,
 6.
 Gods, 17, 124, 125.
 Gorget, armor, 89.
 Gorget, shell, 82.
 Gouges, 148.
 Gourd, 105.
 Gravers, description of, 177,
 194.
 Griffin, Mr. James, 139.
 Grubb Creek, 43.
 Guss, Mr., 15.
 Guard, trigger, 70.
 Guards, 33.
 Guards, bowstring, 185.
 Gun, barrel, 99.
 Gun, stock, 66.
- H.
- Hair, 125.
 Hair, beaver, 127.
 Hairdressing, 122.
 Hammerstone, 58, 118, 135, 151,
 194.
 Hanson, Randolph, 29.
 Hanson, murder of, 31.
 Harignera, Chief, 28.
 Harpoons, barbed, 179.
 Harrington, Mark R., 12, 83, 182,
 190, 193.
 Harrisburg, 8, 203.
 Harrisburg (footnote), 24.
 Hatchet, 89.
 Hawakneu, 93.
 Headdress, 125.
 Heckwelder, 10, 13, 15.
 Hematite, 121, 137.
 Hendrickson, Captain, 19.
 Henlopen, Cape, 20.
 Herrman, A., map, 201, 203.
 Hewetts', 16.
 History, aboriginal, 36.
 History, early, 25.
 Historical Magazine (q), 27.
 Hoe, iron, 43, 65.
 Hoes, 58, 89.
 Holmes, Thomas, 203.
 Holmes, W. H., 190.
 Holn, Thomas, 21.
 Holtwood, 43.
 Hone, 81.
- Hook, gaff, 128.
 Horses, 32.
 Hunting, 94.
 Hurons, 12, 14, 19, 22, 23, 96.
- I.
- Incising, pipes, 79.
 Iron, 70, 71, 101, 128, 135, 199.
 Iron, celt shaped, 89.
- J.
- Jamestown, 35, 92.
 James, river, 34, 35.
 Jasper, use of, 116, 199.
 Jaspilite, chips, 118.
 Jesuit Mission (footnote), 20.
 Jesuit, Relations, 14, 16, 20.
 Jesuit, rings, 202.
 Jesuits, 22, 23.
 Jinglers, 87, 103, 126, 145.
- K.
- Keller, Mr. John, 97.
 Kettle, brass, 64, 66, 68, 70, 71,
 72, 73, 85, 87.
 Knepp, farm of, 40.
 Knife, 64, 93.
 Knife, iron, 65, 67, 68, 70, 73.
- L.
- La Hontan, maps, 37.
 Lalemont, Jerome, 24.
 Lancaster County, 8, 24.
 Landis, David H., 5.
 Land Office, 203.
 Laws, 12.
 Lead, 88.
 Leaders, entrapped, 36.
 Lenäpé, 9, 10, 11, 19, 20, 134.
 Lehigh River, 9, 10.
 Lephart, Oscar, 202.
 LeMercier, 20.
 Lignite, ornament, 65, 121.
 Lignite, piece of, 81.
 Limonite, 73.
 London, 36.
 Loskiel, 12.
- M.
- McSherry, 15, 16.
 Mahinganak (Mahican), 23.
 Maize, 59, 128, 199.
 Majic, 124.
 Man eaters, 26.
 Man, medicine, 25.
 Manor Township, 39.
 Marauders, 35.
 Maryland, 18, 22, 23, 26, 27, 28,
 29, 31, 33, 34, 92, 96, 201,
 202, 204.

- Maryland allies, 25, 95.
 Maryland (footnote), 20.
 Maryland, refugees, 37.
 Masks, 107.
 Maryland, negotiations, 36.
 Mason, Col., 28.
 Massawomeks, 17, 18.
 Massomacks, 13.
 Match-lock, 89.
 Mat, rush, 103.
 Matting, description of, 83.
 Matting, reed, 88.
 Medal, 28.
 Measurements, anatomical, 44.
 Mesocephalic, index, 48, 61.
 Metal, objects, 67.
 Metal, pipe, 80.
 Mica, found, 43, 74.
 Mica shale, 44.
 Mill, Witmer's, 202.
 Minckus, 21.
 Mingwe, 16.
 Minquas, 16, 19, 20, 21, 85.
 Minsi, 9.
 Missions, 25.
 Missisagues, Indians, 94.
 Mississippi Valley, 11, 134.
 Mohawk, 12.
 Monolithic, pipes, 81.
 Montreal Island, Canada, 106.
 Mooney, 193.
 Moorhead, Warren K., 11.
 Mortar, wood, 194.
 Mortuary, customs, 60, 64, 71,
 87, 99, 101, 133, 137.
 Mould, 70.
 Mould, bullet, 65, 91.
 Mourning, 95.
 Mullers, 58.
 Mullers, description of, 194.
 Munsee, 9.
 Murano, 131, 132.
 Murray, L. W., 203.
 Museum, Los Angeles, 129.
 Museum, Natural History, 199.
 Museum, Rochester, N. Y., 47,
 154.
 Museum, State, 186.
- N.
- Nanticoke, 15.
 Natheldaneh, 22.
 Necklace, 74, 82, 87, 101, 126,
 127, 185.
 Neuter nation, 14, 22.
 Neutrals, 11, 12.
 New Amsterdam, 130.
 Newcastle, Delaware, 9.
 New Jersey, 9, 10, 20.
 New Netherland, 19, 130.
 New York, 9, 10, 12, 19, 61, 76,
 78, 107, 117, 121, 133.
 Niagara, 11.
 Nottoways, 11.
 Nova Albion, 22.
- O.
- Occonegies, tribe, 36.
 Ochre, 65, 70, 72.
 Octoraro Creek, 18, 201, 202, 204.
 Officers, 33.
 Ohio, 12, 13.
 Ohio, tribes of, 131.
 Ohio Valley, 134.
 Oneida, 12.
 Onondaga, 12, 19, 25.
 Ontario, Lake, 12, 19, 24.
 Orchard, William C., 128, 131.
 Ornament, ear, 51.
 Ornaments, 59, 130, 185.
 Ornaments, metal, 87, 115.
 Ouendat, 14.
- P.
- Paint, grey, 88.
 Paint, red, 49, 65, 68, 118, 121,
 197.
 Paint, stones, 70.
 Paints, description of, 148.
 Paints, used, 83.
 Paleontology, vertebrate, 199.
 Palisades, 32.
 Palmers Island, 22.
 Pantheon, 123.
 Parker, Dr. Arthur, 12, 76.
 Pascatoway Indians, 20.
 Patapsco, 28.
 Patterns, pottery, 60, 109, 111,
 189.
 Pauxtent River, 20, 22.
 Pendant, 72, 81, 116, 127, 151,
 157, 198.
 Pendant, lignite, 65.
 Pendant, pipe, 103.
 Pendants, shell, 128.
 Penn, William, 6, 202.
 Pennsylvania Water Power
 Corp., 43.
 Pequa, town of, 61.
 Perrot, Nichols, 26.
 Pestle, stone, 101.
 Pestles, 194.
 Pestles, in pits, 54-56.
 Philadelphia, 201, 203.
 Pigment, found, 85.
 Pike, iron, 128.
 Pin, bone, 147, 171.
 Pipe, metal, smoking, 70, 115.
 Pipe, terra cotta, 65, 67, 70, 71,
 72.
 Pipes, 44, 58, 65, 72, 78, 81, 96,
 103, 115, 133, 152, 185, 190,
 205.

- Pipes, antler, 148.
- Pipes, in pits, 54-56.
- Piscataway, 20, 26, 27.
- Pistol, 89.
- Plantations, frontier, 35.
- Plate, 105.
- Plug, pin, 182.
- Pot covers, description of, 151, 194.
- Potomac, 19, 28, 33.
- Potomac, valley, 134.
- Potter, 110.
- Pottery, description of, 59.
- Pottery, laboratory study, 139-145.
- Powhatan, 15, 18.
- Priests, 124.
- Prints, finger on clay, 188.
- Prisoners, 26, 31.
- Prizes, 95.
- Pumpkin, 128.

Q.

- Quadroque, 18.
- Quartz, 39, 40, 59, 65, 117, 137, 199.
- Quartzite, 118.

R.

- Raccoons, 14.
- Raccoon, bones, in pits, 54-56.
- Raeren, 91.
- Rafeix, 25.
- Rappahannock, 33.
- Raritan (footnote), 20.
- Raritangs, 20.
- Rattle, 57.
- Rattle, turtle shell, 59.
- Reagueneau, 22.
- Rebellion, 96.
- Records, archaeological, 10.
- Relations, 22, 25, 27.
- Religion, 123.
- Report, Ceramic Repository, 146.
- Rhyolite, use of, 117, 118, 199.
- Richie, William, 47, 154.
- Rifle, parts, 81.
- Rings, metal, 87.
- Roach, 121.
- Roberts, J. C., 39, 40.
- Rutchogah, 22.

S.

- Sacrifice, 33, 124.
- St. Marys, 20.
- Safe Harbor Dam, 7, 39.
- Safe Harbor Water Power Corporation, 6, 7.
- Sasafras Land, 9.
- Sawahegeh, 22.

- Scarhuhadgh, 22.
- Schrabisch, Max, 11.
- Schoolcraft, 131.
- Schultz, Edward N., 156.
- Scissors, 65, 68.
- Scrapers, 148, 185, 198.
- Scrapers, in pits, 54-56.
- Seeds, 64, 65, 68, 72, 87, 91, 103, 127.
- Seneca, 12, 23, 27, 28, 29, 36, 78.
- Settlers, white, 37.
- Shamokin (footnote), 24.
- Shea, J. G., 16, 17.
- Shell, 41, 58, 68, 82, 83, 135, 139, 157, 188.
- Shell, conc. use of, 82, 83, 87.
- Shell, turtle, 41, 57.
- Shells, tempering, 104.
- Shells, nut, 199.
- Sheshequin, 190.
- Shoemaker, Colonel Henry W., 5.
- Siege, 32.
- Sinkers, net, description of, 149.
- Skinner, Alanson B., 12, 13, 151.
- Skin, bear, 127.
- Skins, beaver, 94.
- Smith, Captain John, 13, 15, 17, 18, 78.
- Smoothers, pottery, 81, 118, 194.
- Snakes, 11.
- Society, Pennsylvania Archaeology, 203.
- South Mountain, 18.
- Spaniards, trade, 131.
- Spear, head, 72.
- Spear, stemmed, 81.
- Speck, Dr. Frank G., 15.
- Spoon, 73, 127.
- Squash, 128.
- Staman's Run, 97, 135, 153.
- Steatite, 121, 157, 197, 201.
- Stone objects, description of, 58, 81.
- Stones, bolas, 149.
- Stoneware, jug, 64, 91.
- Streeter, S. F., 27.
- Stronghold, surrender of, 37.
- Stuyvesant, Peter, 130.
- Sunbury, 190.
- Survey, paper, 5.
- Sweden, New, 20, 22, 24.
- Swedes, 16, 20, 21, 203.
- Swedish Commission, 22.
- Sword, 68, 99, 103.

T.

- Tantaquidgeon, Miss Gladys, 15.
- Target, 96.
- Teeth, 185.
- Teeth, animal, description of, 64, 148.

- Teeth, bear, 74.
 Teeth, comb, 122, 123, 125.
 Teeth, elk, 68, 126, 158.
 Teeth, human, 70.
 Tempering, pottery, 190, 193.
 Tennessee, 11.
 Tennessee River, 83, 182.
 Tesinigh, 18.
 Thimble, 73, 87.
 Tionontati, 12.
 Tobacco, 62, 78, 135.
 Tockwoghes, 17.
 Tomahawk, 34, 37, 93.
 Tools, bone antler, 147.
 Tools, steel, 125, 152.
 Totem, 10.
 Trade, articles, description of, 59, 85.
 Trade, 62, 68, 103, 126, 129, 151, 199.
 Trade, cloth, 64, 88.
 Trade, lead, 88.
 Trade, pipe, 80.
 Traders, 116, 103, 130, 132.
 Trader, white, 99.
 Trehoven, Cornelius Van, 20.
 Trenches, start of, 43, 64.
 Trenton, 20.
 Tribes, perished, 35.
 Troops, Virginia, 28.
 Truman, Major Thomas, 28, 29, 31.
 Tsonontonans, 27.
 Tubes, bone, 57.
 Tubes, description of, 177.
 Turkey, bones, in pits, 54-56.
 Turkey Hill, 62, 156, 202.
 Turtle, effigy, 123.
 Turtle Tribe, 9.
 Tuscaroras, 11.
- U.
- Unalachtigo, 6, 10.
 Unala-tka, 10.
 Unami, 9.
 Upland Creek, 203.
 Utchowig, 18.
- V.
- Venetian, 92.
 Venice, 131.
- Vimont, 21.
 Virginia, 11, 20, 22, 23, 27, 28, 32, 35, 92.
 Virginia, history of, 34.
 Virginia, news from, 36.
 Virginia, officers, 31.
- W.
- Wabash, 13.
 Walls, John, 6.
 Wampum, 130.
 Wampum belt, 127.
 Wampum, so-called, 185.
 Wandat, 14.
 War, 24, 34, 96.
 War, Pennsylvania frontier, 38.
 Ware, 74, 111, 113.
 Warriors, Iroquois, 37.
 Washington Borough, 18, 24, 62.
 Washington, D. C., 26, 128.
 Washington, Gen. George, 28.
 Washington, Col. John, 28.
 Weapons, pipes used as, 78.
 Weaving, 182.
 Werowances, 18.
 Whistles, 179.
 Williamsburg, Virginia, 92.
 Wire, iron, 65.
 Witmer, John W., 202.
 Witmer's Run, 156, 203.
 Wonameys, 9.
 Wood, charred, 70.
 Wood, description of, 127.
 Wooden objects, description of, 85.
 Woodward, Arthur, 91, 129.
 Wolf, 123.
 Wolf, pipe, 78.
 Wrightsville, 202.
 Wrongs, 33.
 Wyandot, 14.
 Wyoming Historical and Geological Society, 5.
- Y.
- Yard, chunky, 193.
 York, river, 34.
 Youghiogheny, river, 134.
- Z.
- Zinc, analysis, 85.



SHULTZ SITE

SCALE IN FEET

LEGEND

○ PITS ○ BELL PITS ○ BURIALS

1955 D. A. CADDOW

PAMPHLET BINDER



"And ordered"

LORD BROS

215 North Main

St. Louis, Mo.

Phone 1-1111

